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ORIGINAL LECTURES.

CLINICAL LECTURE

ON THE EFFECTS OF CONTUSIONS AS INFLUENCED BY DIFFERENT CONSTITUTIONAL STATES OF THE WOUNDED.

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Delivered at the Hôpital de la Pitié, Paris.

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IT is now several years since I published, for the first time, some examples showing that contusions produce diverse effects according to the different constitutional states of the wounded.*

Constitutional states modify in a manner, latent but certain, the solids and the fluids; and when accompanied by dyscrasia and dystrophy, they impair both the immediate and the remote prognosis of contusions. In infants, the resorption of effusions and the union of the walls of cavities take place often with great readiness; complications are rare, and the contused wounds themselves will heal easily, owing to the extreme activity of the organic functions. In elderly people, however, it is entirely different. Ecchymoses, for instance, are still visible after some weeks or even months; the life of the tissues with them is so precarious that slight pressure even is sufficient to cause inflammation, or lead to mortification of the skin, especially in regions remote from the heart. Weak adults, and those suffering with some cachexia, in this respect are like the aged. If diathetic patients are cachectics, inflammations destructive in character, with gangrene, are seen, because the extravasated liquid possesses irritating qualities, and because the tissues have only a feeble power of resistance. If, on the contrary, the organism is still sufficiently strong, there are no complications at the beginning, but the processes of repair languish and usually do not go on to completion. An undefined irritation persists at the site of the wound, and later, without any known cause, or from the slightest, morbid processes more or less grave are lighted up. In some it is a neoplasm, in others an osteitis or a cold abscess; a dry arthritis in one, a white swelling in another. The recognition of the diathetic state is just here so much the more important, since it enables us to foretell not only the deviations in the reparative processes, but also the kind of deviation which threatens this or that patient.

In children, contusions of the bones will produce more particularly acute inflammations, osteomyelitis, and suppurative periostitis, or, on the other hand, neoplasms, osteosarcoma, and myeloid tumors. If they are scrofulous, we may have rarefying osteitis, bone-abscesses, obstinate periostitis, and hyperostoses. A contusion of the breast in a young girl will cause an adenoma; in a woman of forty years, a carcinoma; in a wet-nurse, an abscess. Besides this, no matter what the sex or the region, we must be careful of glandular contusions, above all when they come on in mature age and do not disappear rapidly; because these persistent indurations and tumefactions are strongly suggestive of a malignant disease. In arthritics suppuration and gangrene are relatively rare, but neoplasms are to be feared. Tophi have been seen to develop in gouty patients just at the point of contusion. The *morbus coxæ senilis* has more than once appeared right after a fall on the hip in rheumatic people. In syphilitics contusion is often followed by an exostosis on the surface of superficial bones.

In the absence of clearly appreciable disease (often overlooked because we do not search carefully enough), certain symptoms consecutive to contusion owe their persistence or their intensity to some constitutional predisposition. We allude to rebellious neuralgias. Neuromata developing at the point of contusion have been assigned as a cause of this symptom; analogous to the neuralgia of amputated stumps. The anatomical fact is quite acceptable, but the conclusions drawn from it are less so when we reflect that all amputation-stumps have these neuromata, and that neuralgia of the stump is relatively rare. We have observed several cases of these neuralgias consecutive to contusions, and we have found in most of them a most manifest neuropathic state, which had existed previous to the injury. Almost all of them were arthritic, and the young women were some-

* Article "Contusions" in the *Dict. Encycl. des Sciences.*

times hysterical or else prospective gouty subjects. In support of the opinions that precede, we will now cite some very conclusive observations, showing the manner in which contusion acts in awakening the diathesis. The following case is a type of the kind which can be seen every day in practice:

Case I.—Fall upon the Knees of a Rheumatic Patient—New Attack of General Rheumatism.—Caroline T., 18 years of age, good constitution, and general health previously good, entered my service for the first time in September, 1878, for a rheumatic arthritis, mono-articular, of the right knee, the last vestige of a poly-articular rheumatism of puerperal origin occurring one month after confinement. The lesion was rather serious, the synovia being thickened, and a considerable hydrarthrosis existed. Treatment was by revulsives, and absolute immobilization with compression. The cure seemed well on its way in January, and she was sent for convalescence to Vésinet (a hospital out of town), and there remained six weeks, when she was apparently cured, except that some articular crackling was noticed when the member was stretched, and a slight weakness of the leg was shown after a long walk, with a little pain.

She returned to her work, and in March fell on her knees, when the right one again became red, swollen, and painful, and the next day she returned to the hospital. We took to the immobility again, and used electricity on the triceps muscle, as it was notably atrophied. This attack lasted twenty days, and she then asked to be received as an in-door infirmary nurse,—a profession which all know to be very fatiguing. All went well with her up to the 24th of May, when she had a renewed fall on her knees, and the same evening the right knee again became painful, and the day after fever lit up again, and the patient took her place in bed in our wards. On the 26th, I found her with the articulation swollen, red, and painful on the slightest pressure and the least movement. The left knee also became very sensitive. There was a moderate fever, with anorexia and gastric disorder. On the following days the rheumatism generalized itself, and successively invaded the two wrists and the left shoulder. We prescribed vapor-baths and salicylate of sodium; the last was not well tolerated, and we replaced it with sulphate of quinine. By the 10th of June the attack was nearly over; the right knee, which had been affected the first, remained painful the latest; on the 15th she went on with her work as nurse. If we consider puerperal rheumatism as infectious or microbian, the preceding case compels us to admit that the articulation first taken with the malady remained inhabited by the microbe, which, on an occasion of a direct determining cause, such as cold or contusion, redeveloped; even when the contusion involved a different part of the economy, as another joint, for instance. If, in a relapse of the malady, it invaded an articulation which had not been attacked in the first appearance of the disease, we must further admit that this articulation had received the microbe in a latent state, or that it had got it by recent colonization or emanation from the focus from which the new outbreak started. These hypotheses seem to be a little subtile, if not singular, but we must use them if we wish to explain the reappearance, which is otherwise incontestable, of propathies provoked by traumatism.

On Contusion in Subjects that are Convalescing from Infectious Diseases, etc.—Accident has just placed before my eyes two instances which should be associated with the preceding,—first, because in the two cases a slight contusion was followed by the formation of pus in the wounded point; and, second, because in each the existence of a previous malady was noted, with this difference, however, that the present observations relate to acute diseases that seemed completely cured, and in them the connection with the development of abscess might easily have been overlooked. It is by analogy that I admit the connection, relying on the law that a slight interstitial wound in a subject free from all defect ought not to suppurate.

Case II.—Slight Contusion at the End of a Convalescence from Typhoid Fever—Abscess with Slow Development.—Mrs. X., 69 years old, having always had excellent health, and still presenting all appearance of it, entered my service for a tumor situated to the left of the sternum, on a level with the cartilage of the third rib. It was about as large as the half of an apple, regular, and circumscribed by a projecting border. There was no change in the color of the skin, and it was soft and fluctuating, almost indolent, on pressure. This tumor

offered all the characters of a cold abscess or a chronic suppurating periostitis. The etiology and pathogenesis constituted the interesting points, and I will say at once that I made an incision, which gave issue to pus that was thick and without odor; and a cure followed in about ten days later, without any notable accident.

Asked as to the origin of the abscess and its development, Mrs. X. gave me the following information. Living in the country in a healthy locality, she came ten months ago to Paris to see her daughter, and contracted a typhoid fever, which made its appearance on her return, followed by a convalescence which was prolonged for three months, but which was not characterized by anything especial except weakness. Towards the end of this convalescence she accidentally struck the end of a long loaf of bread against her breast at the point where the abscess came on later. The pain at first was slight, and went away in two days, but came back at the end of a month, less marked, but now constant, and always awakened by the touch. Some weeks afterwards a tumefaction came on, that was at first profound and seemed connected with the bones. A doctor who was consulted gave iodine frictions and iodide of potassium, but without any benefit. The tumor continued until she came to me. I am sorry I did not have the pus examined to see if the pyogenic microbe was present in it; but in any case the fact is not the less interesting. We know that deep abscesses that may be periosseous, or even sub-periosteal, are not rare in the course of a typhoid fever, but I do not know of any instance of an abscess coming on after the cessation of the fever, and of which a contusion was definitely the determining cause. I owe to one of my *confrères*, a distinguished doctor of Paris, an observation that is comparable to this one, with this exception, that the child affected was recovering from the measles, of which he seemed cured. It was a little boy of seven, of good constitution, tall and strong for his age, and in January, 1884, he was attacked with measles. His convalescence was slow. On the 13th of March he had not yet taken on his usual good appearance, when he struck himself rather violently in the submaxillary region on the right side near the sterno-mastoid muscle. Some days afterwards a phlegmon developed itself that started from this point as a centre, and invaded all the neck and cheek on that side, with a considerable swelling of all the region. The pus was a long time developing, and it was not until the 2d of April that the fluctuations became clear enough to permit an incision to be made, when a large teaspoonful of pus came away that was yellow in color, but inodorous, and examined with the microscope it did not present any bacteria. Suppuration was moderate, and the cure was completed by the 20th of April.

On Contusion in Phthisical Patients.—Certain cold abscesses which come in tuberculous patients have an origin that is quite analogous to the preceding cases. It seems that contusion provokes, as it does in some syphilitics, the formation of a gumma of a tuberculous nature similar to the gummata of syphilis; and sometimes quite rapidly, taking upon itself characters usually considered peculiar to warm abscesses. The following is an example of such a case:

Case III.—Slight Contusion in a Phthisical Patient—Suppuration at the Point of Injury.—B., 37 years of age, entered the 17th of April, 1880, for a contusion of the internal face of the forearm of three days' date and resulting from a shock against a hard body. The skin was not broken, nor were there any ecchymoses or blood-lumps, nevertheless an inflammation of a phlegmonous and circumscribed character developed rapidly at the point of contusion, and it was accompanied by fever with malaise. The day after he came in, then a little more than four days since his accident, we noticed the existence of a collection of about the size of a nut, and an incision of two centimetres was made. Local relief was prompt, but the general trouble persisted, as well as the fever. The thermometer was 39° that night, and the day after it was 40° (centigrade). Examination of the chest showed him to be consumptive, and explained his symptoms. The preceding week he had had two attacks of hæmoptysis, and percussion with auscultation revealed at the apex of the right lung unequivocal signs of advanced phthisis. On the left side the lesion was not so marked. At the superior limit of the right lobe and the middle lobe we could hear subcrepitant râles and a slight souffle that clearly indicated the existence of a zone of pneumonia around the tuberculous focus at the summit: so that in this

way all the symptoms were explained of which the abscess on the arm could not give us an account. The pneumonia was not of great extent, and treated with revulsives (a purgative and the white oxide of antimony) it slowly gave way, and the patient was back to his usual state in about three weeks. This fact is instructive in a double point of view. First, it confirms the rule in virtue of which rapid suppuration of an interstitial wound, without gravity, has almost always for its cause the existence of some general disease anterior to it; and also the other rule that scrofula and tuberculosis are among the general morbid states that most favor these abnormal suppurations. Second, it equally shows that a wound, in itself insignificant, which intervenes in the course of a visceral affection, during its progress (which was indicated here by the recent hæmoptysis) can accelerate the development of that affection or even sensibly aggravate it.

The effects of contusion are still more remarkable in the following observation:

Case IV.—Contusion in a Scrofulous Patient—Development of Multiple Tuberculous Manifestations—Integrity of the Lungs—Death.—In 1882, bed No. 1 of Lefranc ward of the Hôpital de la Pitié held a young woman 24 years of age, who was pale, weakly, and thin. She was covered from head to foot with scrofulous lesions; the neck was furrowed with cicatrices and fistulas, as well as the right breast and the thorax near by. There were also several of these collections on the left forearm on a level with the ulna, and the left knee was the seat of a considerable tumefaction offering all the characters of a tuberculous osteo-arthritis of a grave form. It was for this last lesion that she entered the hospital. The interest of this case resides above all in the genesis of the symptoms. Attacked in early childhood by a benign eruption of impetigo, she was fairly well up to the age of seven, when she received a violent blow on the lower jaw. An abscess developed at the point of contusion, then the lymphatic ganglions of the neck inflamed one after another and suppurated, becoming fistulous. Little by little she got better, and her youth passed away without any particular derangement of health. At twenty she had married, and had a first child the following year. She did not nurse it, and her health was quickly re-established. At twenty-three she had a second child, and nursed it for several months, from which resulted a considerable loss of flesh and great weakness; then without any known cause the cicatrices of the neck opened, and new collections formed. At the same time the right breast received a slight contusion and formed several abscesses, which opened and presented the appearance of tuberculous ulcerations. A little while afterwards she entered the hospital in the lamentable state described above. It is a remarkable fact that with all the appearances of an advanced cachexia, with an abundant suppuration and sharp pains in the tibio-femoral articulation, we were able to say that the internal organs were intact. Lungs, liver, kidneys, all were in an apparent healthy state. There was only an evening fever and sensible diminution in the appetite. She asked to have an amputation of the thigh performed, but in her poor condition I did not wish to do the operation, but intended to later: so a local and general treatment was instituted. Antiseptic dressings modified the wounds and stopped the hectic fever. A wadded apparatus immobilizing the knee calmed the pains, so that in a month she was much better, and this would have been the moment to have performed the amputation, but she now refused the operation. A purulent collection of enormous size formed in the thigh, and at the end of two months she died, the lungs remaining sound to the last, which made us regret that the amputation had been refused.

The influence of contusion here in provoking disease appears in the clearest manner,—at the beginning in lighting up the first manifestations of tubercle in a little girl who had no other antecedents than a slight impetigo when a child, then in calling forth a second series of lesions in an organ evidently predisposed to suppuration, but as a rule most rebellious to invasion by tubercle. What is important to notice here is not only that the contusions revealed the diathesis and brought about the specific deposits at the points that were injured, but that they also seemed to have provoked the formation of focuses that occupied a considerable extent, just as if there had taken place from the point of injury a dispersion or a propagation of the pathogenic germs.

It was in this way that the contusion of the jaw brought about the abscesses of the

neck; and the contusion of the breast was followed very quickly by the formation of mammary abscesses and purulent collections in the forearm, and an arthropathy of the knee-joint. The migration of the microbes that took place from the thoracic region to the superior and also to the inferior member could just as well have affected the viscera and caused a tubercular granulation there, or a meningitis. This seems so simple that I cannot understand why some surgeons still refuse to admit these facts showing a tubercular dissemination after accidental or surgical traumatism. Fortunately, their number diminishes every day, so that before another ten years all resistance to these simple and useful ideas will have ceased.

I can associate with the above another observation similar to it, as here again a contusion of the hip in a phthisical patient provoked the development of an acute tubercular coxalgia, and pulmonary lesions of the same nature which caused death in less than three months. At the same time that this patient was in my hospital wards, two others occupied beds there who were also suffering with contusions of the hip: they were all about the same age, but had different constitutions, so that these three patients show in a most positive manner how the consequences of the same lesion can vary according to the morbid predispositions of the wounded. In the second case (a young man robust but predisposed to rheumatism), a fall on the trochanter major brought on an acute coxalgia, which was treated with an energetic antiphlogistic method which, combined with immobility in Bonnet's apparatus, led to a rapid cure. The third patient was a girl of hysterical temperament; she met with the same accident, that is to say, a fall on the trochanter major, and it led in her case to a contraction of the peri-trochanterian muscles and an extreme deformity of the hip, which had lasted for nine months before I saw her. Anæsthesia with chloroform stopped the contraction, and it allowed me to straighten out the member at once. She was then put in the immovable form (Bonnet's), and in a few days she was cured.

I have observed the same phenomenon of contraction in a case of peri-articular contusion of the elbow in a young man. The superior member was so firmly fixed in extension that I thought it was a case of anchylosis. This was a month after the accident; but after chloroform was given it was easy to move the articulation, and a few days of repose with a wadded bandage brought about a cure. These contractions following an articular contusion are important to recognize, for they may cause false anchylosis (and generally with the joint at a bad angle), which can be easily cured with chloroform and a few quick manipulations. This is why, when the anatomical causes of an anchylosis do not seem evident, I propose always to defer making my diagnosis until after an exploration with the aid of chloroform and attempt at passive motion have been made.

On Contusion as a Determining Cause of Neoplasms.—We all know how much the question of the *rôle* of contusion has been discussed in the development of cancer and tumors in general. For my part, I have always admitted this cause not only for the malignant new-growths, but also for the most benign, such as cysts, lipoma, etc. One of my internes, M. Le Clerc, has, under my directions, accumulated a quantity of material, and has prepared a thesis giving the actual state of our knowledge upon this subject. The following are the conclusions reached in his thesis. 1st. Contusion has an undeniable *rôle* in the etiology of neoplasms. 2d. It acts by exaggerating the reparative process going on in the centre of the tissues, and by creating in the wounded part a *locus minoris resistantiæ*. 3d. It is, however, only a localized cause, and cannot produce by itself a neoplasm; to do so it needs a diathesis that we will call neoplastic, which is secondary, and depends upon arthritism.

I see these cases every day in practice. Here is one which I wish to cite as giving proof of an action provoked by a traumatism, and which caused a tumor to appear at the point of the contusion that would not have appeared spontaneously until at least two years later:

Case V.—Polycystic Adenoma of Both Breasts, developed on one side from a contusion, and twenty months afterwards on the other side spontaneously.—Pauline P., 52 years of age, servant, small in size, rather stout, and having always had perfect health, was entered at La Pitié on the 28th of October, 1878, for a double tumor of the mammary glands. She gave the following account of her malady. In 1876, some weeks before the cessation of her menses,

she struck her right breast in this way: she was breaking a stick across her knee, and it gave way suddenly, striking her violently on the upper part of the breast. A month later there appeared at this point a hard painless nodule, which gradually increased, until when she came into the hospital it occupied all the gland with nodosities of a conglomerated character, without, however, augmenting its volume or changing its form. It did not alter the structure nor change the color of the skin, neither did it adhere to it. The left breast was also invaded by the same lesion, though less advanced: it had become affected only four months before, without any known cause. In the axilla the glands were enlarged and a lymphatic cord was found attached to the tumor; it was now sensitive, and the seat of frequent lancinating pains. It presented the same character on both sides, except that one had advanced more rapidly than the other. I diagnosticated a polycystic adenoma, an affection that is, as a rule, bilateral, as M. Réclus has so well shown. It appeared first in the right breast at the point of contusion; it would have no doubt attacked the left just as well had it been the site of the contusion.

ORIGINAL COMMUNICATIONS.

WEIGERT ON COAGULATION-NECROSIS.

(Abstract from the Original.)

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IN a series of elaborate articles in the *Deutsche Medicinische Wochenschrift* (October 29 and November 5, 12, and 19, 1885), Weigert gives the following interesting account of the present state of our knowledge on this important subject, and defines more clearly than he has hitherto done his views upon the matter.

I.—GENERAL CHARACTERISTICS OF COAGULATION-NECROSIS.

In coagulation-necrosis—*i.e.*, in that metamorphosis by which the tissue or its constituents become changed into a dead, coagulated mass—it is easy to recognize that the cellular elements are actually dead. They have become incapable of life, and then either are absorbed or form an inert mass, which becomes encapsuled or else penetrated by the growth of the adjoining tissue. But, in order that we may employ the term, the mass must not only be dead, but *coagulated*. The fluid or semi-fluid albuminous bodies contained in the tissue must have been transformed into a solid substance. The evidences that this change has taken place are principally macroscopic. The product in question presents to the naked eye so great a resemblance to the two spontaneously-coagulated substances with which we are most familiar — fibrin and cheese — that for a long time we have employed the term "fibrinous" or "cheesy metamorphosis." But microscopically it differs greatly from fibrin. We see no thready or granular coagulum, but only the tissue-elements; which, however, must *in themselves* be so changed that the reason for the peculiar macroscopic appearance becomes comprehensible.

This condensation of tissue seems to have been prevented in those cases where we find crumb-like fragments floating in a fluid. In this case the fragments constitute, of course, the coagulated substance. We find a similar condition developing often in genuine fibrinous coagula,—as, for example, in softened thrombi. A still more familiar instance is to be observed in curds floating in the whey of curdled milk.

There is still another form of coagulation of tissue, wherein the solidifying albuminous material acquires a transparent "hyaline" appearance. Macroscopically this is seldom characteristic unless of great extent, but under the microscope it can be recognized by the peculiar hyaline brightness.

Still other cases of coagulation-necrosis occur in which there is no fibrinous or caseous metamorphosis visible to the naked eye. In such cases we conclude that those cells which are altered in appearance under the microscope are not only *dead*, but *coagulated*, if the same causes have been active which in other instances would have produced a macroscopic caseous or fibrinous change. For example, if a permanent obstruction occur in a renal artery an infarct is produced, giving the macroscopic appearances of coagulation-necrosis. If, however, the obstruction was but temporary, no pathological change can be seen by the unaided vision, but the epithelial cells are observed

under the microscope to be necrotic, and it is but just to infer that they are also coagulated.

II.—THE LOSS OF THE NUCLEUS IN TISSUES UNDERGOING COAGULATION-NECROSIS.

The individual cell-element in the coagulated condition shows at first but little change, except when the hyaline appearance is developed. After twelve to twenty-four hours, however, a very striking phenomenon is to be observed,—namely, the disappearance of the nucleus. This is an invariable occurrence, except in those cases where only that part of the cell is affected which does not contain the nucleus.

On the presence of the nucleus depends the power of the cell to grow and multiply,—as Kölliker has shown,—and its disappearance indicates the death of the cell. It is well known that certain cells, as the red blood-corpuscles and the cells of the horny epithelium, are normally without nuclei. But the uniform disappearance of the nucleus in the case of other fixed cells had been overlooked, except in a few instances, until Weigert showed its relation to the cell's death. Although all cells which undergo coagulation-necrosis lose their nuclei, yet it does not follow that those which have lost their nuclei must necessarily have suffered this change, as cells in gangrene and in certain other conditions are often without nuclei.

III.—OTHER VIEWS REGARDING THE EXISTENCE OF THE METAMORPHOSIS DESIGNATED "COAGULATION-NECROSIS."

Some writers have endeavored to explain the peculiar appearance as seen in renal infarct by supposing fibrin from the blood to be actually present. Others claimed that a simple necrosis had taken place. But a portion of kidney which has simply died is of quite a different character from an infarct. Virchow, in 1865, advanced the view that the remarkable consolidation observed is due not to coagulation, but to the abstraction of water. He bases his argument on two statements.

First, that dead animal matter behaves in a manner exactly analogous to the tissue of a plant which has died,—*i.e.*, it loses its watery elements. He claims, indeed, that it is not in a condition to retain the water entering into its constitution.

Second, that cheesy masses occasionally separate from pus after it has stood for some time, and that these clearly are evidences of a condensation due to loss of water; also that under the microscope certain shrunken cells are to be found, which constitute another proof of the abstraction of water.

Weigert, however, considers Virchow's deductions not correctly drawn. There is no reason, he says, why water should be abstracted from a part dying within and surrounded by the moist tissues of the body. We should rather expect it to remain moist or to become even softer, as indeed occurs, following the death of portions of the central nervous system. Moreover, the dry aspect of caseous masses is only apparent. This applies to many coagulated substances: a boiled egg, for instance, looks dryer than a raw one, although no loss of water has taken place. As regards the pus above referred to, Weigert claims that it is no ordinary purulent matter, but arises from processes wherein cheesy metamorphosis has already taken place, and that this apparently condensed pus really consists of the cheesy matter previously formed. It is certain, too, that by condensing pus in a vacuum over sulphuric acid we obtain a substance resembling condensed milk, with a leathery skin on the surface, but bearing no likeness whatever to cheese. The shrunken pus-cells also cannot be considered as a proof that any abstraction of water has occurred.

Weigert's belief that the cheesy masses are not due to this supposed loss of water, but to a coagulation-necrosis, is upheld by other facts: thus, in caseous pneumonia and in the similar degeneration of lymphatic glands there is macroscopically no shrinkage to be seen, as would be the case if the condition was produced by the abstraction of water; and if we examine under the microscope *fresh* specimens of cheesy metamorphosis which have not been treated with alcohol, we can distinguish easily the individual cell-elements, and can recognize that no shrinkage whatever has taken place.

IV.—CONDITIONS NECESSARY TO THE COAGULATION OF TISSUE.

There are four essential elements which must co-operate to produce tissue-coagulation.

1. *The part must die.* This must necessarily occur before coagulation can take place, if we adopt the theory of Schmidt.

2. *The tissues must contain substances capable of coagulation.* This coagulable material is present in all protoplasm of the body, except that of the central nervous system, in which, as before stated, we find softening following necrosis, instead of the occurrence of coagulation. Virchow also has remarked this isolated position of nervous tissue, and attributes the softening to the inability of the parts to lose their water, owing to their being enclosed in a bony capsule. But Weigert states very pertinently that, whereas in cerebral embolism softening occurs, in solitary tubercle of the brain we have cheesy metamorphosis taking place.

3. *Plasmatic fluid (as blood or lymph) in great excess must flow through the dead tissue.* In harmony with the theory of Schmidt, we believed that the fibrinogen of the fluid was thus brought into connection with the fibrinoplastic matter of the cells, and the coagulation effected.

More recently, Rauschenbach, of Dorpat, has claimed that, besides containing fibrinogen, the blood-plasma exerts a peculiar chemical action upon protoplasm, and has demonstrated this upon dead tissue outside of the body.

The coagulating element of the plasma becomes rapidly exhausted, hence the fluid must be in excess,—*i.e.*, it must *flow through* the mass. A simple saturation of the tissue is not sufficient, otherwise we would expect to find all the coagulable parts of the body becoming cheesy after somatic death. So also a fœtus dying within the uterus does not undergo cheesy degeneration, but macerates.

After somatic death there does occur, it is true, a sort of coagulation, as exemplified in cadaveric rigidity. But this differs essentially from coagulation-necrosis, in that it rapidly disappears and the cell-nuclei are not destroyed.

A quantity of plasma sufficiently large to produce coagulation-necrosis can only be supplied within the living body, where the dead portion is in uninterrupted connection, if possible on all sides, with living tissue in which the blood is circulating. By this means fresh plasma can be continually supplied, and that which is exhausted removed. This condition is fulfilled when a part dies *within* the living tissues, as in renal infarct or in an encysted fœtus of extra-uterine pregnancy. Superficial portions of the body only exceptionally become cheesy, since the requisite continual supply of fresh plasma cannot often be brought about.

The influence of the fluid thus flowing through dead masses may be further observed in the resorption of soluble substances contained in the latter. This is well seen in infarct of the spleen, even when no actual hemorrhage takes place. Although there are no pervious blood-vessels in the dead tissue, yet the red infarct first becomes livid from the diffusion of blood-pigment into it, and afterwards paler from reabsorption, even before a migration of white blood-cells into it occurs. This reabsorption is effected by the permeation of the fluid, and this latter is rendered possible by the intercommunication of the interstitial spaces of the living and dead portions. The phenomenon of the disappearance of the nucleus also depends on this "flowing through" of the plasmatic fluid.

The dead cells of a portion of tissue simply lying in this fluid, or remaining in some cavity of the body which contains plasma, do not lose their nuclei for a longer time, if at all. Baumgarten has confirmed this observation of Weigert's made years ago, and found, on introducing a portion of kidney into the peritoneal cavity, that the cell-nuclei remain unaffected. It is only when the tissue is very porous,—as in lung,—or the portion very thin, or when it becomes penetrated by newly-developing tissue, that the nuclei disappear.

Outside of the body this permeation with fluid cannot be effected, and the disappearance of the nucleus can only exceptionally be accomplished.

But by thoroughly mixing semen with a large excess of plasma, Rauschenbach found that the heads of the spermatozoids (*i.e.*, the nuclei) disappear.

The loss of the nucleus is, however, not dependent upon coagulation-necrosis. As already alluded to, Senftleben has shown that portions of lung hardened in alcohol (and certainly, therefore, fully coagulated) lose their nuclei when introduced into the abdominal cavity. Hence the disappearance of the nucleus in coagulation-necrosis is not caused by the coagulation, but is a coeffect with it of the flowing through of the plasmatic fluid.

Its occurrence, however,—apart from the physiological absence of the nucleus in red blood-corpuscles and in horny cells,—is not

only a very valuable sign that the permeation has taken place, but is also in addition a strong indication that coagulation-necrosis of the cellular elements has been effected.

4. *Influences capable of hindering coagulation must not be present.* Such, for example, are the poison of purulent matter, products of putrefaction, certain chemical substances, and layers of living epithelial cells between the dead masses and the plasmatic fluid.

V.—COMBINATION OF THE COAGULATION-NECROSIS WITH OTHER METAMORPHOSES.

With the factors producing coagulation-necrosis others may co-operate, which, without hindering the process, may influence its kind and form.

For example, a partial fatty degeneration of the cells may accompany or, oftener, precede it.

As is well known, fatty degeneration is produced in living cells by a deficient supply of oxygen leading to a gradual injury of the cell-protoplasm. If this condition was present before the actual death and coagulation of the cell, we find the coagulated masses mixed with fat-globules, and, if the fatty degeneration was extreme, the mass will possess a softer quality than ordinary. It is a question still unanswered, whether subsequent fatty degeneration can take place in the coagulated substratum.

Again, the form of the coagulated cells may be altered by the formation of vacuoles in them previous to their death. This is especially the case in epithelial elements.

Especially do we find forms varying from the typical coagulation-necrotic form when the cells were broken up in the surrounding fluid before actual coagulation took place. The fibrin masses which Rauschenbach thus produced in his experiments in cells outside of the body of course differ greatly from the necrotic masses arising within the body, and entirely resemble ordinary fibrin.

This brings us to the consideration of the next division of the subject.

VI.—THE RELATION OF COAGULATION-NECROSIS TO THE FORMATION OF TRUE FIBRIN.

Alexander Schmidt has shown that fibrin arises on the one hand from the white blood-cells, and on the other from the fluid of the blood. For its production it is necessary that the corpuscles should die, and thus at the same time produce the necessary ferment and set free the fibrino-plastic substance which, with the fibrinogen dissolved in the blood-fluid, renders the coagulation of fibrin possible. In later times the theory has been modified, and even in certain respects opposed, by the discovery of the third formed element of the blood,—the "blood-plates" of Bizzozero. The relation of these bodies to coagulation is still a much-disputed point, as is, indeed, the question concerning their true nature.

So far as regards the subject of coagulation-necrosis of tissue, Schmidt's pupils have shown that the white blood-cells are sufficient to account for the formation of fibrin. Indeed, Weigert has proved by experiments outside of the body that even other cells may, under altered conditions, give rise to its production. Whether, then, besides the cellular elements, the blood-plates possess the same power, and whether these bodies arise in a manner peculiar to themselves or result from the breaking up of the "vermicles" of Gaule or of certain white blood-corpuscles, are questions on which we cannot enter here.

Even if we adopt the most extreme of the various views,—*i.e.*, that the blood-plates are independent bodies, and that they produce one of the substances necessary not only for the development of thrombi but for the formation of fibrin in general,—yet the question of the relation of coagulation-necrosis to the clotting of blood is not affected, since through the investigations referred to it has been proved that coagulation *can* take place without their agency. Now, it is certain that, besides the fibrinogen, material necessary for the production of fibrin, and which is derived from the blood-plates (or in some cases also from the leucocytes), may occur already dissolved or suspended in the living blood-plasma; and in such cases fibrin is formed when the dissolved substances are precipitated. But when the material is contained in cells (with the exception, in certain cases, of the leucocytes) coagulation can only be produced in the presence of plasma outside of the body, when the cells are either mechanically or chemically broken up; and Rauschenbach has proved by experiment that fibrin can be generated in this way, in which case it is thready and granular and exhibits no trace of cell-structure.

Different still is it when the cells are not destroyed and the coagulable matter remains in them; then, on account of the easy exhaustion of the fibrinogen, a requisite amount can only be obtained when the old and depleted plasma is continually removed and fresh constantly penetrates into the cell,—that is, when the plasma *flows through* the cell. In this case the coagulation takes place within the cell itself, and the form of the tissue is preserved, although the cells are changed into coagulated masses without nuclei.

A final and satisfactory solution of the question how far the leucocytes share in the ordinary coagulation of blood can only be obtained by continued experimentation. Observations in pathology certainly tend to prove that they have at least some agency in the production of ordinary fibrin. This is well exemplified in the nature of pathological effusions. Exudations—*i.e.*, inflammatory effusions rich in leucocytes—contain much fibrin, while transudations—*i.e.*, effusions poor in leucocytes—have but little fibrin.

It is a further proof of the theory of Schmidt, that transitional forms exist between the true coagulation-necrosis of white blood-cells and ordinary fibrin. There exists, in fact, a true coagulation-necrosis of leucocytes. This is to be seen in cheesy masses, inflammation of serous membranes, thrombi, and pseudo-diphtheritis of the throat and palate. Weigert says that years ago he explained the nature of the shining flakes seen in this affection, in that masses of leucocytes coming out of the mucous membrane were heaped upon its surface and here underwent coagulation-necrosis. He was obliged to assume a special anatomical structure to permit of this view, and in later years this condition has been proved to exist. Now, situated between these flakes and the ordinary fibrin in the trachea there are transitional forms in the shape of strands.

Fibrin-product and coagulation-necrosis are, at any rate, very closely connected. Both owe their origin to "the action of plasma on dead protoplasm" (Rauschenbach). In the first case the material derived from the protoplasm may arise either from degenerated blood-plates or from broken-up cells. In principle it is the same.

The conception of the production of coagulation-necrosis will be somewhat different for those who do not accept the views of Schmidt,—for those, namely, who believe that the component parts of fibrin are always to be found together in solution in the fluid, and need, at most, but the influence of the ferment to be precipitated. Since they must admit that within living tissue no precipitation of fibrin takes place, they are obliged to make the supposition that in coagulation-necrosis the substances already dissolved in the plasma must be *deposited in the dead cell* and there coagulated, and that no elements to produce this effect are derived from the cell itself.

The propositions before stated regarding the production of coagulation-necrosis hold good under this theory as well. The same permeation of the cell with plasmatic fluid must occur; and whether but one or whether several of the components of fibrin must be supplied from without the cell, the conception of the result as coagulation-necrosis is not in any way altered.

VII.—FURTHER CHANGES IN COAGULATION-NECROTIC AND IN FIBRINOUS MASSES: CALCIFICATION; SOFTENING; HYALINE FORMATION AND RECASTING (UMPRAEGUNG).

It is a very strong indication of the affinity of coagulation-necrotic and of fibrinous substances that they may undergo the same additional metamorphoses.

1. *Calcification.* There is a marked tendency in both materials towards a subsequent impregnation with lime-salts. The rapidity with which this is brought about varies considerably. In some animals (herbivora) it is accomplished much more rapidly than in man.

Not only can all coagulated masses become calcareous, but it would be safe to say that every pathological calcification (not calcareous metastasis) must have been preceded by a coagulation-necrotic, or more generally a fibrinous, stage.

For example, we see calcification in thrombi, fibrinous inflammation, infarcts, foci of atheroma, cheesy masses of tuberculosis; also in isolated dead cells, as in the renal epithelium in certain cases, and in ganglion-cells.

2. *Softening.* This is another termination of both metamorphoses. We have already seen that the crumb-like decomposition of coagulated masses can be produced by an advanced fatty degeneration which preceded the coagulation.

Softening may, however, be produced under other conditions, as in pure fibrinous

masses which were from the first of somewhat looser consistence. In many cases the origin of the softening is to be found in the secondary solution of albuminous matter, caused by the presence of micro-organisms,—as in pyæmic thrombi. In other cases the reason of the change is still unknown.

3. *The production of hyaline matter.* Still another secondary alteration, occurring both in ordinary fibrin and in coagulation-necrotic masses, consists in their transformation into transparent, homogeneous, strongly-refractive hyaline masses.

Recklinghausen considers hyaline to be a distinct material, of which all but the microscopical characteristics are still unknown. Although Weigert does not believe that all which Recklinghausen has described under this title is to be classified with coagulated matter, yet he is of the opinion that typical hyaline forms like "*kanalisirte*" fibrin and the products of pseudo-diphtheritis represent derivatives of coagulated substances, not independent degeneration. None of the characteristics of hyaline, as given by Recklinghausen, oppose this view. This writer states its chemical peculiarities to be that it is not soluble in ammonium hydrate or in acids, and in this that it differs from ordinary fibrin. But the solubility of the material called "fibrin," from an anatomical point of view, is not at all always the same. It depends largely on its degree of solidity, and on chemical variations in it produced by the admixture of other ingredients. Thus, some forms become redissolved even in the fluids of the body (transitional fibrin), and others (true fibrin) are soluble with much greater difficulty, so that it would be no wonder if under the still further chemical action of the fluids of the body the conditions of solubility became still further altered. Recklinghausen himself appears to lay but little stress upon the differences in solubility, and, moreover, includes under "hyaline" many substances which behave quite differently with the same reagents. Among these he classifies amyloid matter, which both chemically and in the presence of dyes is to be distinguished from it.

A second set of peculiarities, he says, consists in its behavior with staining-fluids,—namely, that the acid-dyes (carmine, picro-carmine, eosin, acid-fuchsin), and in a less degree hæmatoxylin, stain it very intensely. But carmine, picro-carmine, and hæmatoxylin are very unreliable, except for nuclear staining, and eosin and acid-fuchsin stain a great variety of substances very deeply. Indeed, coagulation-necrotic masses, as seen in infarcts, etc., have such a disposition to be colored by the latter two dyes that the tinctorial reaction of hyaline, if it has any value as a characteristic, would indicate the close relationship of the two substances.

Still, it might be possible to discover a sufficient ground of difference between fibrin and hyaline matter in the way of origin of the latter. Recklinghausen states that for the production of hyaline matter the presence of numerous cells with abundant protoplasmic contents is necessary. These cells absorb the albuminous substances which were in solution in the blood, then lose their nuclei and granular appearance, and, indeed, their individual forms, and become "welded together." This explanation, Weigert says, corresponds almost exactly with the one for the occurrence of coagulation-necrotic hyaline formation given by him in a previous article.

If, then, no argument obtains against the classification of hyaline formation among the coagulations, let us next consider some which are quite decisive in its favor.

In coagulation outside of the body, we find in the same substance sometimes a hyaline, sometimes a granular, material developing. Many varieties of cheese, for example, are opaque, while some, as the genuine "Schweizerkäse," are hyaline. So also in the case of blood. By heating it in the usual way, the albuminous matter is deposited in flocculent, opaque masses. But a method may be followed (that of Koch) by which the coagulum becomes exquisitely hyaline.

How is it, now, within the body? The following reasons may be advanced which show that coagulated substances—ordinary fibrinous as well as coagulation-necrotic—stand in a very close genetic relation to hyaline.

A. It can be proved that fibrin becomes hyaline in a later stage. That this may really take place is shown by the fact that whereas under ordinary circumstances fibrin is wont to be found, under especial conditions hyaline is produced. One part of a mass, indeed, may frequently consist

of true fibrin and another of hyaline matter. In fibrinous inflammation of serous membranes, too, the deposited matter often becomes wholly or partially hyaline. Those cases in which the deeper layers of the coagulated matter are hyaline and the superficial ones ordinary fibrinous are strongly indicative that a transformation has taken place. Instances of this are to be found in large aneurisms, in endocarditis, and in thrombi.

B. In the so-called diphtheritis of the fauces there appears to be developed simultaneously and through one and the same agency, and apparently after the same method, hyaline masses on the throat and palate and ordinary fibrin in the trachea, and each material seems to shade off almost imperceptibly into the other. It is scarcely conceivable that entirely different processes are going on in the two regions: rather must we conclude that fibrin and hyaline are in principle the same.

Γ. Transitions can be observed both in cases of coagulation-necrosis and in true fibrin. In fresh infarcts of the heart the foci almost exactly resemble fibrin macroscopically, and microscopically we find the muscle-fibres slightly granular, often still striated, but without nuclei. Later in the affection—*i.e.*, in cases where the foci appear tendinous—we discover under the microscope the most exquisite development of hyaline matter. The same thing can be observed in renal infarct, tumors, etc. In all of these there is no evidence of the extravasation of some substance which may undergo a hyaline transformation, but the cells themselves have become hyaline. We find also a waxy degeneration of the muscles, in which, as in diphtheritis, the material seems to be hyaline from the outset.

Δ. In such processes as tuberculosis, which usually lead to cheesy metamorphosis, there may also appear a development of hyaline matter (hyaline-, or, incorrectly, myxomatous-tubercle). Here, too, it is exceedingly probable that we have to do not with two degenerations different in principle, but with the same process in different stages of development.

We must finally consider the question why sometimes hyaline and sometimes non-hyaline coagulation occurs. In the examples given of coagulation occurring outside of the body, the differences in the case of cheese may be due to variations in the amount of pressure applied. The stiffened hyaline blood-plasma may be produced, because the coagulation took place so slowly at the prolonged low temperature employed. Within the body it is probably not always the same cause at work to produce the formation of hyaline. Still, one circumstance seems to favor it especially,—namely, the action of a very great excess of plasma upon the coagulated or coagulating masses,—whether coagulation-necrotic or fibrinous.

This excess may be supplied in several ways.

(*a*) The stream of plasma may act for a long time and very thoroughly upon matter already coagulated, but not yet hyaline. The latter is accomplished when the fluid can flow in between the individual parts of the clotted mass, which have become separated from each other,—as, for example, in old infarcts, "*kanalisirte*" fibrin, and in masses of cheesy degeneration which have been penetrated by blood-vessels and divided by fissures. Probably also pressure has much to do with the production of hyaline from fibrin in some cases, as exemplified in the deeper layers of the fibrinous coagula in an aortic aneurism, in which the pressure is quite considerable.

(*b*) The preponderance of pressure may be effected by its coming into relation with the substance destined to coagulate, not throughout a long time, but in great abundance, and from the outside: thus the material, even though of moderately large amount, becomes hyaline at once. The hyaline masses of diphtheritis of the throat are formed in this way.

(*c*) Finally, the permeating plasma may not be actually abundant, but the foci of coagulation may be isolated and so small that the presence of fissures is not necessary. This is well seen in organs wherein parenchymatous portions only are affected, while the connective tissue supporting the blood-vessels remains alive. The coagulated masses can either then be hyaline from the outstart, or become so after a very short time.

From what has been adduced, it follows that many of the masses designated "hyaline" are to be classified as coagulated substances. Of still other substances presenting the characteristics of hyaline matter, it is certainly possible that some owe their existence to a previous coagulation; and of these—with the reserve that it is

only a supposition—Weigert places in category (*c*) that formation of hyaline matter seen in the deposit of this substance in the walls of capillaries and in elastic membranes. In this manner, also, Recklinghausen probably correctly explains the deposition of amyloid matter. This substance would, then, but represent a still more advanced metamorphosis of the coagulated material, with still other tinctorial characteristics,—*i.e.*, would be but a more highly potentized hyaline substance. That the hyaline in the cases of capillaries and of elastic membranes is developed from the fixed cells of these parts is exceedingly improbable, since the presence of cells rich in protoplasm is required for its formation, and the cells in these situations are few in number and contain but little protoplasm. Recklinghausen believes that it is developed from leucocytes which have been deposited there and become amalgamated (fused together). But there is absolutely no proof of the truth of this view, and much to be said against it. We find no flakes of hyaline matter and no leucocytes still preserved in proportion to the amount of hyaline found. Therefore, although this explanation would accord so well with that of coagulation-necrosis, we can scarcely avoid the adoption of another view,—namely, that the hyaline already formed by previous coagulation (derived perhaps from disintegrated blood-plates or leucocytes), and in the finest possible state of division, is in this form *deposited in the tissue*. That the material was so very finely divided, and that therefore each particle of it was surrounded by a comparatively great excess of plasma (see (*c*) above), are the reasons why it became hyaline at the outset.

This conception is also of importance in comprehending the production of amyloid matter, as has been already indicated.

4. *Recasting*. Closely connected with the formation of hyaline is a transformation of coagulated matter, which Weigert calls a "recoinage" or "recasting" (umprägung), inasmuch as a substance is produced thereby which simulates almost exactly sclerotic connective tissue or a tendinous structure. This may be observed in infarct of the heart and in fibro-myomata of the uterus. In the latter the fibrous portions are produced by a coagulation-necrosis of smooth muscular fibres, followed by a gradual organization,—*i.e.*, they become penetrated by blood-vessels, and are transformed into hyaline masses. In fact, the "fibrous" portions of a hard fibro-myoma contain exceedingly little true connective tissue. That calcification may occur instead of this metamorphosis is a proof of the disposition of myomata to undergo necrosis of the muscle-substance.

Another example of this "recasting," this apparent reformation of tissue, is to be found in the change which takes place in the coats of aneurisms. Out of the ordinary fibrin here there may be developed a material which macroscopically has all the appearances of true connective tissue, but which under the microscope reveals only the slightest amount of this penetrating the hyaline-remnants of fibrin.

REPORT ON THE PROGRESS OF DERMATOLOGY.

BY ARTHUR VAN HARLINGEN, M.D.

PART I.—GENERAL QUESTIONS, CASES, ETC.

KELOID.—Mr. Jonathan Hutchinson (*London Medical Times*, May 23, 1885) calls attention to the beautiful picture in Alibert's work, representing a raised, glossy, scar-like growth, flat in the surface and with abrupt, irregular margins, from which spurs project into the healthy skin, occurring most commonly (as in Alibert's plate) in the middle of the chest, as the typical keloid. The name keloid is now no longer used to designate any other disease of the skin. A perceptible scar almost universally precedes the occurrence of keloid, which, however, once it has begun, may extend far beyond the limits of the original scar. In a very large majority of cases keloid shows a tendency, after some years' duration, to spontaneous disappearance. This is more particularly the case where the keloid is restricted to scar-tissue. In children the scars of burns thus attacked almost invariably get well, and their duration in many cases is only short. On the contrary, when keloid has begun in a very small scar and has spread widely at the expense of sound skin, it persists much longer without change, and may possibly last out the patient's life.

There appears to be reason to believe that keloid may at times assume a constitutional form, and Hutchinson gives the case of a lady who, after suffering with

keloid of the chest for more than ten years, developed the same disease in other parts of the body, while the original lesion became ulcerated in the centre, and healed at the upper edge while advancing at the lower. One of the new lesions was a streak of induration two or three inches long, of a bright red color, consisting of hard knots embedded in the skin. Just above the navel was another long streak of similar character, but less pronounced. Two lesions, probably the beginning of fresh keloid tumors, appeared near the streak last mentioned, on the abdomen. They were conical papules about as large as the end of the little finger, and of a dusky red color. They were not glossy or smooth, but looked much like abortive boils. They had been present about a year.

Hutchinson considers it unadvisable to operate in keloid in the great majority of cases. When, however, keloid begins without any obvious preceding scar, and where it persists for very long periods and is a cause of great suffering, it may be fair to give the patient the chance afforded by an excision. It may be that, even if the keloid should return in the excision-scar, it would not be so painful nor inconvenient as before. Hutchinson has operated in two cases of what has been called subcutaneous keloid, the growth taking place in the corium or even in the subcutaneous tissue, and never tending to cause the raised, bossy patch which characterizes the common form. This subcutaneous, or at any rate not cuticular, form is very rare, and its diagnosis from sarcoma of the skin is very difficult. Hutchinson gives an account of these cases in full, for which we have not space here.

The conclusions reached by him respecting keloid are substantially as follows: 1. With keloid, as with other skin-diseases, too close a conformity to the type-form cannot be expected. 2. For clinical convenience, several varieties may be recognized in which the prognosis differs as to disappearance and proneness to return after excision. 3. In one of these, the most typical, keloid begins in very small, perhaps forgotten, scars, and slowly spreads far beyond their limits into sound skin. The extension and duration are indefinite, the usual features well marked. There is great proneness to return very quickly after excision. 4. In a second variety keloid begins in the centre of large scars, as burns, is seldom well characterized, often does not extend beyond the scar, and, especially in young persons, tends to disappear spontaneously. 5. In a third form the keloid-growth is deeper, never produces glossy, elevated patches, appears not in scars, but in old inflammatory patches. This form is less prone to recur after incision than the others. 6. Cases of multiple keloid prove either that there is in some persons a remarkable tendency to the disease, or that primary patches have the power of infecting the blood and producing others. 7. There is little or no clinical proof of tendency on the part of keloid to pass into cancer.

Two Cases of Herpes (Zoster?) with Motor Paralysis. — Dr. Waller (*Brit. Med. Journal*, from a German source) reports the case of a woman of 68 who had a painful patch of herpes covering the whole of the right side of the face, stopping abruptly at the middle line. After some weeks the eruption and pain disappeared, being replaced, however, by paralysis of the same side of the face, with loss of taste on the right half of the tongue.

Waller also reports the case of an old man who had an herpetic eruption situated on the anterior aspect of the upper arm on the right side, accompanied by itching and pricking sensations. Eight days after the appearance of the eruption the patient found himself unable to raise or extend the arm. There was no pain or swelling in the muscles or joints, and the electric reactions were normal. The location of the eruption and of the paralysis both indicated the circumflex and the musculo-cutaneous as being the nerves affected. Treatment by electricity restored the arm to its normal condition.

(Compare the article by Strübing translated in the *Medical Times* for January 9, page 281.)

Yaws and Frambœsia.—The disease known as "yaws," "frambœsia," "pian," etc., and to which it has recently been proposed to give the name "Polypapilloma tropicum," has been studied by Pontoppidan, the well-known Danish dermatologist, in a recent visit to the Lesser Antilles and the interior of San Domingo. From his brochure (kindly sent the reporter) we learn that he has observed it

chiefly in the colored race, whites being almost invariably exempt, either from some race-idiosyncrasy, or, as Pontoppidan is inclined to think, rather from their superior cleanliness. Here the reporter differs from him, as he has observed this and similar affections among the colored citizens of Philadelphia, who are certainly of more cleanly habits than the average German.

Frambœsia is a local, contagious skin-affection, occurring without perceptible general symptoms, which shows itself in the form of small papules rising under the skin. When these have reached the size of a split pea the epidermic covering is thrown off, and the lesions appear as small tumors covered with a yellowish crust, looking like dirty ivory counters or a round bit of cheese. When the crust is removed, a moist, reddish, but not ulcerating, raised patch is observed, resembling the mucous papule of syphilis, and when the lesions are situated about the genito-anal region the resemblance is very strong. If proliferation has been rapid, the tumors may become hypertrophied and assume a raspberry-like appearance.

Pontoppidan correctly draws attention to the fact overlooked by Fox, Duhring, and other writers, that the removal of the crusts does not leave an ulcer behind, but only a moist surface. The affection, in fact, is highly superficial, belonging rather to processes like psoriasis or lupus erythematosus than to the more destructive processes.

Examination of the microscopic appearances of the eruption, made, we believe, for the first time by our author, demonstrated the absence of any fungus like tricophyton or microsporon either in the crusts or deeper. Below the layer of dried pus and epidermic cells was found a layer of granulation-cells in no way distinctive. But in the largest and best-developed patches the papillary layer was well marked and usually intact, though the papillæ were flattened, and the rete wasted and full of round cells. The corium was everywhere normal. Though perhaps hyperæmic and succulent, it contained no foreign elements. The disease therefore, in all probability, is situated in the rete Malpighii. The affection, though almost certainly contagious, must continue until the character of the contagion is made out to be classed among the neoplasmata. Pontoppidan prefers to call it yaws.

Histological Changes in Syphilis of the Skin.—Neumann (*Vierteljahrschr. f. Derm. u. Syph.*, xii. p. 203), in an elaborate paper illustrated by superb chromolithographs, goes into the histology of dermatosyphilis very thoroughly. His conclusions are essentially as follows: 1. It is known that the syphilodermata, anatomically considered, depend essentially upon round-cell infiltration in the immediate neighborhood of the vessels. While those of the upper layers of the cutis and the pars papillaris are chiefly affected, the arteries and veins of the deeper layers of the cutis, the panniculus adiposus, are likewise more or less affected. The intensity of the pathological changes is less marked in the recent forms of the macular syphiloderm, but becomes marked to a high degree in the papular and tubercular lesions and in gummata.

The disease-products are found in the case of macular syphilodermata only in the papillary layers, without penetrating to the epidermis. In proportion as the growth advances this boundary is overstepped, the rete becomes infiltrated and its lower boundary obliterated, so that the round cells come to be immediately beneath the tightly-stretched horny layer.

The exudation-cells, at first true round cells, become spindle-formed at a later period, and appear thus to a preponderating degree in the outer walls of the vessels.

The pigment occurs usually in the form of granules of various size and color, usually orange to brown. The pigment-granules occur partly in the exudation, partly in the connective-tissue cells. In the first case resorption takes place readily, but in the latter case slowly or not at all.

The papillary fibres appear spongy and clouded molecularly. In gummata this cloudiness is observed in the deepest layers of the cutis.

The follicles are variously affected. The hair-follicle shows round cells not only in its neighborhood, but also in its outer root-sheath, which in the acneiform and lichenoid lesions sometimes take on club-shaped forms and cystoid enlargements. Similar collections are also observed about the sebaceous glands.

Giant-cells are found in the acneiform, lichenoid, and gummatous lesions, but not in macular, recent, lenticular, papular lesions, nor in the initial lesion.

Certain elements of the tissues, as the smooth muscular fibres, seem to offer a peculiar resistance to syphilitic infiltration.

The various syphilodermata being essentially modifications of one and the same process, no sharp histological line can be drawn between them. In certain cases, however, the follicles appear to be the point of origin of the disease; in other cases the papillary bodies, the blood-vessels of which are affected.

In recent syphilodermata the pigmentation goes on to absorption with the disappearance of the exclusively round cells.

Finally, the following important fact results from Neumann's experiments,—namely, that with the diminution of the clinical appearances the anatomical changes do not alter. Exudate cells with pigment in fact remain in the depth of the tissues of the cutis even when the eye of the clinician fails to perceive them.

SCLEREMIA AND SCLERODERMA.—Besnier (*Vierteljahrschr. für Derm. u. Syph.*, 1885, p. 594; from *La Semaine Médicale*), referring to a lecture by Köbner, of Berlin, in 1884, endeavors to bring order out of the chaos which has for a long time prevailed in the nomenclature of this affection. In an earlier article, published in the *Annales* in 1880, on the dermatoscleroses, Besnier divided these into two groups: the diffused or generalized and the partial or circumscribed. In the first of these groups there is only one form, that which was described by Alibert under the name "sclérémie des adultes." This is identical with Thirial's sclérémie des adultes, Gintrac's sclérodermie, and Hardy's sclérodermie œdémateuse.

In the second group are included the other forms: lardaceous, parchment-like, and striated sclerodermas, morphœa, sclerodactytilie (Ball), progressive sclerodermia, trophic disturbances in the extremities, etc.

Alibert first described these affections, and divided them into the classes of generalized and partial scleroma, which he considered similar processes.

That certain dermatoscleroses occurring at localized points are essentially the same as true diffuse scleroderma—may occur in connection with the latter or pass into it—has been asserted by many authors, Besnier among the number. However, he thinks it better to reserve the name sclerema for the diffuse form, and scleroderma for the other varieties, with the addition of some distinguishing epithet.

UNILATERAL PRURITUS.—Joseph (*Berlin. Klin. Wochens.*, No. 30, 1885), in the case of a patient suffering from complete paralysis of the left side following heart-disease and emboli, observed marked pruritus confined to the affected side. The latter showed loss of motion and sensation, diminution of temperature, the heat of the body diminished, knee-reflex absent, and, while the skin was soft and the sebaceous secretion normal, an abundant perspiration which for weeks was observed on the right side was quite absent from the affected one. A factitious urticaria which was brought out over the whole body was much more marked on the healthy side, where also the quaddels were more persistent.

The treatment consisted in rubbing in the following twice daily:

℞ Chloral hydrat.,
Camphor crystal., āā ʒj;
Vaselin, ʒx. M.

This diminished the pruritus greatly and gave the patient rest.

LICHEN SCROFULOSUS. — Dr. Gottheil (*Jour. Cut. and Venereal Diseases*, May, 1886) gives notes of a case of this curious affection, with numerous references to the literature of the subject. The patient, a boy 9 years of age, showed when first examined ten groups of the eruption exactly similar to one another, and uniformly composed of aggregations of round, pin-head-sized, brownish-red, flattened, slightly-scaling papules; the skin between the elevations being perfectly normal, and the individual lesions showing no tendency to coalesce. No acne-papules or scratch-marks were present. On the abdomen, midway between the umbilicus and the pubes, was a narrow, semicircular patch, some seven inches long, with its concavity turned upward, and above this on either side, on the mammary line, another smaller one. Posteriorly two large patches, some six inches in diameter, occupied each the region of one shoulder-blade, being joined by a connecting band of eruption at their upper borders; while just above the beginning of the natal fold was another and more irregular group. Four smaller patches occupied the hollow

of the back. The extremities were free, as they almost invariably are, with the exception of two well-marked, quarter-dollar-sized patches situated one at either side of the ligamentum patellæ.

The child was in perfect health, without scrofulous taint. Family history exceptionally free from phthisis. The patches had existed for two years, and had never caused any further annoyance than occasional slight itchiness. They were first noticed upon the abdomen, and had slowly grown to the extent above noted. The area of affected skin was slowly increasing. No lesions had disappeared.

The boy was kept under observation for some months without treatment; but not the slightest change was observed in any of the old papules, nor did any new ones appear. Under the free use of cod-liver oil internally and externally, the papules were gradually flattening out and the patches were fading away when the case was reported.

THE SYMPTOMATOLOGY OF ALOPECIA AREATA. — From the beginning of the present century up to a very recent period, says Michelson (*Monatshefte f. Prakt. Dermatologie*, 1886, p. 77), only one kind of disease has been reckoned as alopecia areata, or area Celsi: namely, that variety of loss of hair in patches where the skin shows no marked change either of inflammation or, what is more important, of scaliness, and where the hair in the immediate neighborhood is only in rare cases changed in the slightest degree as regards its outward appearance. The occurrence of hairs broken off just above the openings of the hair-follicles is regarded as a pathognomonic symptom of a parasitic affection. Under these circumstances, no results as regards the pathogenesis of alopecia areata can be expected from the study of cases such as those described by von Sehlen. This author brings forward "a peripheric scaly zone with broken-off hairs of abnormal appearance" as characteristic of area Celsi, and under this erroneous designation reports two cases occurring shortly after each other in two brothers of 6 and 8 years respectively. Here the border of the bald patches was not only covered with small white scales, but "surrounded by moist eczema."

Thin and Lassar, who, according to Michelson, saw in von Sehlen's discovery of the "areacoccus" only a confirmation of their earlier contributions to the same subject, claimed priority for their published views of what they called alopecia areata, Lassar asserting that this form of the disease is accompanied by "free desquamation and secretion."

Michelson feels himself impelled to enter the lists promptly to avert this threatening confusion in nomenclature, and brings forward a series of characteristic cases of what he, with all the best known writers on dermatology, calls true alopecia areata, endeavoring to confine the use of this name exclusively to the disease which it has always been considered to designate. While in the cases of patchy baldness brought forward by von Sehlen the clinical appearance speaks strongly in favor of a parasitic origin, the opposite is the case in the affection the essential existence of which is shown by the cases brought forward by Michelson.

In no stage of the disease in these cases is a trace of dermatitis present, nor can any shade of difference be perceived between the appearance of the centre on one hand and the outer zone on the other. The hairs on the periphery of the bald spots neither diminished in number nor showed broken shafts; *no tendency to conveyance of the disease to other persons, in spite of every opportunity for contagion.* The disease in Michelson's cases was cured, even in the severest cases, without the employment of parasiticides.

The reporter regards this as a most valuable contribution to dermatology. Few dermatologists dare to undertake a merely critical paper, and yet this ungrateful task must be performed from time to time by some one, for in dermatology the itch for appearing in public is constantly leading to crude, imperfect, and erroneous contributions to this subject, which have no more substance than a soap-bubble, but which no one is bold enough to prick. Let us hear no more; then, of the "contagion" of alopecia areata.

(To be continued.)

TRANSLATIONS.

TWO NEW TESTS FOR SUGAR.*—The two reactions about to be described are common to cane-sugar, milk-sugar, glucose, levulose, and maltose, and to the

* From a communication to the "Kaiserlichen Akademie der Wissenschaften," Vienna.

carbohydrates and glucosides capable of yielding glucose by the action of sulphuric acid. They do not, however, produce any result with inosite, mannite, or quercite.

1. From one-half to two cubic centimetres of the suspected liquid are treated with two drops of a fifteen- or twenty-per-cent. alcoholic solution of alpha-naphthol, and the mixture is shaken. A slight turbidity results from the precipitation of a little naphthol: sulphuric acid is then added in quantity equal to or even double the volume of the fluid, and the whole is briskly shaken. In the presence of sugar a deep violet color is developed, and dilution with water throws down a violet-blue precipitate, soluble in alcohol and ether with a yellow color, or in caustic potash with a golden-yellow color. In order that the reaction may occur as described, the test must be made exactly as stated.

This test will permit the detection of 0.00001 per cent. of sugar, and, with the exception of vanillin, anethol, methyl salicylate, and a few similar substances, gives no reaction when sugar is not present. These substances, however, either produce the color with sulphuric acid alone, or the precipitate formed when the violet solution is diluted with water differs totally in character from that formed in saccharine liquids. The limit of sensibility of Fehling's test is 0.0008 per cent., and that of Trommer's test is 0.0025 per cent.

2. If, instead of the alpha-naphthol in the preceding test, an alcoholic solution of thymol of similar concentration be employed, the remaining manipulations being the same as before, a deep red varying from cinnabar to carmine is produced; dilution with water brings the color to carmine, and after a time there separates a flocculent precipitate, which dissolves with a pale-yellow color in alcohol, ether, and caustic potash, but with a bright yellow in ammonia.

The delicacy of this reaction is about the same as of that with alpha-naphthol.

After many experiments had shown the trustworthiness of the results given by these tests, it was interesting, on account of their exceeding delicacy, to apply them to the solution of the disputed question whether normal human urine does or does not contain sugar. The results of the first attempts were so decided that the urine examined appeared to be diabetic. The urine of a number of perfectly healthy individuals was therefore examined, but with precisely the same results. The tests were made with alcoholic solutions of alpha-naphthol and thymol, exactly as has been described, and the extraordinary delicacy of the reactions can be better understood by the statement that normal urine diluted to from one hundred to three hundred times its volume with water still gives a recognizable reaction. When the urine is diluted to four hundred times its volume, the test shows no result.

In order that there might be no question as to sugar being the actual cause of the reaction, the following substances were examined and gave negative results with both alpha-naphthol and thymol: urea, creatine, xanthine, uric acid, allantoine, hippuric acid, succinic acid, phenol, pyrocatechin, and indican.

These results fully confirm the opinion advanced by Brücke, and supported by many other observers, that normal urine constantly contains sugar.

These tests may be applied in two different manners in order to distinguish a normal from a diabetic urine.

1. A specimen of normal urine and of that to be tested are equally diluted with water to about one hundred times their volume; the same quantity of each is then tested just as has been described: if the suspected urine give a deeper violet than the normal specimen, it may be considered as diabetic.

2. The urine under examination is diluted with water to from four to six hundred times its volume. Even in this enormous dilution diabetic urine will sharply respond to the reactions of the tests described, while normal urine would give no result when diluted to four hundred times its volume.

After carefully studying the various tests for sugar in urine, F. Penzoldt came to the conclusion that the fermentation test is worthy of the greatest confidence in doubtful cases. All experiments, however, seem to show that the two new tests are decidedly more certain than the fermentation test. They leave but one thing to desire: they do not enable a distinction to be made between glucose and levulose, and although the sugar found in urine will in nearly all cases be glucose, yet various instances have occurred in which levulose was detected also.—*Monatshefte für Chemie.*

PHILADELPHIA
MEDICAL TIMES.

PHILADELPHIA, AUGUST 7, 1886.

EDITORIAL.

A CHANGE OF AIR AND SCENE.

SELF-IMPOSED exile from home and its conveniences and comforts during several weeks or months in the year has become a necessity of modern life, if an opinion may be based upon observation of the habits of those around us. A large proportion of the community, but especially the residents of our great cities, feel the migratory instinct come on most strongly at a time of the year when the attractions of city life are at their minimum and the demands of business least pressing; by a coincidence which is not entirely unaccountable, the various places of resort at this time appear to their best advantage as the centres of life and gayety. A visit to the sea-shore, mountain, or spa demonstrates that this exodus from the cities and interior towns during the summer months is now a pronounced feature of American social life.

When such a complete change in the habits of a community as is involved in exchanging home for hotel, and city for country, life occurs, it becomes a fit subject for study by the sanitarian. It seems ungracious, when persons want to enjoy themselves, to point out the dangers of defective drainage, malaria, or

> "of most disastrous chances,
> And moving accidents by flood and field."

And, moreover, of such they have been warned until all are familiar with the lesson, whether they sufficiently profit by it in the application or not. The particular topic to which we wish to direct attention is the very plain and patent fact that in the selection of mountain-resort or sea-voyage, springs or country farm-house, so few families take medical advice as to which is best suited to them and most likely to render the greatest returns in health and vigor for the outlay of money, time, and exertion. Some have learned by experience that the rarefied mountain air or the denser and damper atmosphere of the sea does not agree with them individually; others are now engaged in accumulating such experience. In other words, of the many who leave home for the summer, some will go to places which exactly suit their physical wants, and return greatly benefited by the change of air and scene; a larger number will go to resorts from which they do not derive the maximum amount of benefit, but still are not injured by their stay; and the remaining few will by destiny or chance go to the place which is exactly the most unsuited to them. Had these taken thought, and medical advice, it is possible that some at least would be spared a sad experience. It is a question the importance of which it would be difficult to overrate, and to which a physician only can give an intelligent answer after a careful study of the patient's condition and circumstances, and as the result of mature deliberation. Upon his reply to "Where shall I spend the summer?" may depend the patient's comfort, health, even life itself. The corollary to this would be that physicians should make a careful study of summer resorts (as far as possible by personal investigation) from both a sanitary and a sanatory stand-point, and not commit the error of sending patients with weak hearts or badly-damaged lungs to the mountain-top; with phthisis in its second stage and asthma, to the sea-shore,—or, in general, sending individuals in a precarious state of health to remote and comparatively inaccessible localities.

Probably the sea-shore is suitable for a larger proportion of the community than the mountain or inland plain: its special dangers are late hours, excesses in eating and drinking, and the depression of vitality

due to prolonged bathing or to standing imperfectly clad in the cold and wet bathing-dress. This frequently causes an intestinal catarrh, which prevails very extensively among the recent arrivals at the sea-side. Little children, on the contrary, who are suffering with summer diarrhœa, and who are not allowed to bathe, are greatly benefited by a change from the city to the shore. With regard to sea-sickness, so often experienced by those who go down to the sea in ships, its occurrence appears to be a matter of accident and idiosyncrasy. In spite of the popular belief to the contrary, sea-sickness is never beneficial. The interference with the digestive functions, and the serious nervous depression, exert an unquestionable deleterious effect, and in weak patients the prostration may last for days, and may even terminate fatally.

THE ETIOLOGY OF PUERPERAL MASTITIS.

IN the last number of the *Times* attention was directed (p. 792) to the constant presence of micro-organisms in infective pus. Recent observations of Passet, Ahlfeld, Cohn, and Bumm show pretty conclusively that in suppurative puerperal mastitis one or more of the forms of pyogenic bacteria are always present in the pus and inflamed tissues. The last-named reporter has collected fifteen cases in which pyogenic organisms were present. In eleven of the cases the organism found was the *Staphylococcus pyogenes* (*aureus* and *albus*), and in the remaining four the *Streptococcus pyogenes*. Bumm's observations further indicate that the two forms of bacteria mentioned produce inflammations which show decided clinical differences. In those cases in which the staphylococcus was found the inflammatory process began deep in the parenchyma of the gland. There was at first swelling, gradually followed by tenderness, fluctuation, and, lastly, infiltration and redness of the skin. In the other cases the inflammation was at first superficial, and extended peripherally from a sore nipple, somewhat resembling a cellulo-cutaneous erysipelas, followed by infiltration and abscess-formation.

Krause, Passet, and Michel have shown that the staphylococcus has the power of producing coagulation of the milk, acting in a manner similar to the ordinary bacterium of lactic acid fermentation (*ferment lactique*, Pasteur). This coagulation is not produced in the body, however, unless there is at the same time stasis of the milk in some of the lacteal ducts. When these two conditions, stasis and the presence of the microbes, coexist, coagulation and suppuration follow. Stasis of the milk in the ducts, in the absence of the organisms, does not lead to suppuration.

The observations of Bumm further indicate that any case of fissure or eczema of the nipple may eventuate in suppurative mastitis if the streptococcus pyogenes be accidentally inoculated. This fact points to the necessity of prompt and appropriate treatment of so apparently trifling an affection as "sore nipples."

THE GLASGOW OUTBREAK.

ON the grounds of a large iron-works situated a few miles from Pottsville, in this State, is a mountain-spring of clear water which has been used for years, and until recently had an established reputation for unusual purity as a potable water. A week or two ago a severe epidemic of diarrhœa and fever broke out in the neighborhood, and prevailed so extensively that the iron-works were compelled to stop for the want of available labor. An investigation by Dr. Benjamin Lee, Secretary of the State Board of Health, and Dr. William B. Atkinson, Medical Inspector of the Board, has been made, resulting in the discovery that the families of the eighty or more persons who were attacked, without exception, were in the habit of obtaining their water for domestic purposes from the spring above men-

tioned; while others in close proximity, who used water from other sources, entirely escaped. In one instance a member of an affected family remained free from the symptoms shown by all the others, and his exemption was attributed to the fact that he drank the water only after it had been boiled to make an infusion of coffee.

No obvious source of contamination of the spring could be detected after careful search. Analysis, however, revealed the fact that both free and albuminoid ammonia were present, though in small amount, the proportion being two one-hundredths and thirty-four one-hundredths parts respectively per million; therefore not too great to be due to surface-drainage from decaying vegetable matter. The water appeared clear and the well clean; no cesspool or cemetery was within close proximity to the spring. And yet the inference seems irresistible that it was the cause of the outbreak. The symptoms were not considered as typically typhoid; but the continued fever, attended by prostration, diarrhœa, delirium and headache, and occasional epistaxis, was considered to be of typhoid character, although no rose-spots were detected. Three of the patients have died, but no post-mortem examination has yet been held.

Meanwhile, under the direction of the State Board of Health, sanitary precautions have been adopted under which the epidemic is rapidly declining. There are very few new cases, and the patients are almost uniformly improving.

On account of the meeting of the International Medical Congress in Washington on September 5 of next year, the meeting of the Seventh International Congress of Hygiene and Dermatology at Vienna, which had been fixed for the second week in September, 1887, has been postponed to the end of the month, in order that those who desire to participate in both Congresses may do so.

NOTES FROM SPECIAL CORRESPONDENTS.

PARIS.

To the Philadelphia Medical Times:

Medical news in Paris is rather scarce at present, and everything has settled down to the usual quiet of this season of the year, and the attending physicians and surgeons to the various hospitals are preparing to take their summer leave. Yet the hospitals are generally full, and a great deal of the routine work is going on.

At the Beaujon, a general hospital for both male and female patients, I saw some interesting cases. I was surprised to find so many cases of epithelioma of the mouth and throat. Many of them had been operated on; in some cases the entire half of the lower jaw had been removed, and in others only partial resections. I saw one man whose larynx and a portion of the trachea had been removed. He breathed through a tracheal tube, and I was told he swallowed very well. The operation had been performed forty days previously, but it was thought the disease was returning.

I saw in a number of cases the results of ovariotomy and Battey's operation, and several more cases awaiting operation. On Monday last I witnessed, by invitation of the surgeon-in-charge, Dr. Labbé, the operation of total hysterectomy for carcinoma uteri. The operation lasted one hour and forty-five minutes, and was entirely successful. It was done in a pavilion-cottage, where all such operations are performed under antiseptic precautions, two large steam spray-apparatus acting and filling the room during the time from the beginning of the operation. The temperature of the room was 25° Cent., and there were administered about fourteen drachms of chloroform: of a two-ounce vial about two drachms were left. He used catgut ligatures, cutting them off short. The only mishap in the operation was the slipping off of the ligature of the left tube; he secured it by catch-forceps without harm.

A case that interested me very much was that of a woman suffering with Pott's disease. There was a tumor at the seat of the disease, in the lumbar spine, as large as a hen's egg; but there was an immense tumor on the inner and upper aspect of the thigh, near the groin, from which M. Labbé aspirated about fifty ounces of pus, and injected through the aspirating-needle, which was not removed, about six ounces of a mixture composed proportionately of three grammes of ether and three grammes of iodoform. As might have been expected, the woman writhed in great agony, and we left her in the greatest pain. In injecting the mixture, he also inflated the sac with air to its former dimensions. He said

he had cured several cases like it in the same way. M. Labbé performs all the operations in general surgery and all gynæcological operations. There is no distinction, and all are performed equally well. The staff of the hospital consists of Courvoulhier, Labbé, Fernet, Guyot, Gomboult, Millard, and Ribement. Labbé is considered one of the finest surgeons in Paris, and says he is going to attend the International Medical Congress.

At the Hospital Hôtel-Dieu there are also a number of interesting gynæcological cases. All kinds of abdominal operations are performed here as well as at Beaujon. I saw several awaiting operation, and Dr. Villaud, surgeon-in-charge, showed me two immense dried ovarian cysts and the women he had removed them from only a short time before. I was surprised at the great care and pains he took in his operations. For instance, he operated for the removal of a small fatty tumor on the back of the hand of a young woman. It was not larger than a pigeon's egg, and the incision was only one inch and a half long. After dissecting out the tumor very neatly, which rested on the extensor tendon, he introduced three fine silver-wire sutures; under these a short drainage-tube opening upward; closed it very tightly; applied six or eight short pieces of iodoformed lint; wrapped it in a large amount of cotton batting, and secured all by many turns of carbolized or iodoformized gauze bandages; placed the hand on an enamelled pillow, and over this an iron frame for protection. He applied previous to the operation Esmarch's rubber bandage, and used a spray of ether. There was no bleeding. Iodoform is used very extensively in all these operations. Indeed, the odor of carbolic acid was not apparent to me in any of the dressings in the hospital.

I attended also the ophthalmological clinics of M. Panas. He has a large number of cases of the various diseases of the eye, but nothing that attracted special attention. The internes have each a table and lamp to himself, of which there are twelve or fifteen in two dark rooms, and when the interne is not satisfied with the diagnosis M. Panas re-examines the case and signs the direction, or prescription, as may be, if necessary. The chiefs of the clinics are Germain Sée (medicine), Richet (surgery), and Panas (ophthalmology), all of whom are authorities in their several branches. There are also MM. Gallard, Dufour, Montpierre, and Villaud. Villaud is a fine surgeon. The material furnished in this hospital—and, indeed, in all the hospitals—is immense, and cannot but furnish the best instruction for the great number of students attending, a few of whom are women, one of the latter of whom I met here, a young lady from Scotland.

At the Lourcine there is nothing doing of importance. This hospital is devoted entirely to gynæcology and diseases of women. The wards are plain, simple, one-storied structures, and do not exhibit anything modern. It would be better perhaps if all the hospitals in Paris were torn down and rebuilt, as they all belong to a former régime.

The Salpêtrière, also for women, covers more ground than any hospital in Paris. There are in it a large number of old women. I found there also everything quiet. Professor Charcot (nervous diseases) is absent. Gynæcological operations are performed generally every Thursday, or at least that day is named for the service of ovariotomy, and as written in a note to me by one of the internes, "*Service de l'ovariotomie jeudi matin à* 8½." The service in the hospitals begins at a very early hour,—that is, at eight and a half to nine o'clock, not later than nine,—and if you are not present at the beginning you are apt to miss a good deal.

Monsieur le Dr. Marchant, chief of the surgical clinic at La Charité, has always a full supply of cases. At present, however, there are no cases of special importance or interest.

At the Hospital Saint-Louis one may find all classes of skin-diseases, and it is particularly interesting to those engaged in that specialty.

Paris seems to have lost its prestige as a medical centre, not for want of accomplishments, but for want of that freshness and enterprise so signally apparent at Vienna, Berlin, and even in our own New York and Philadelphia; and no wonder students seek these places in preference. There are but few foreign students at Paris.

S. I. RADCLIFFE, M.D.,
of Washington, D.C.

BOSTON.

THE annual meeting of the Massachusetts Medical Society occurred June 8 and 9, at the building of the Massachusetts Institute of Technology, the President, Dr. Charles D. Homans, in the chair. During the morning of the first day, the members as usual were made welcome at the Massachusetts General, the City, and the Children's Hospitals, at all of which various operations were performed. On the afternoon of the 8th papers were read on "The Abuse of Medical Charity: a Remedy applied in Three Thousand Cases of Out-Door Patients," by Dr. F. F. Doggett, of Boston; "Does the Law recently Enacted by the Legislature permit the Spread of Scarlet Fever?" by Dr. John L. Hildreth, of Cambridge; "The Present Status of Bacterial Pathology, and its Relation to Therapeutics," by Dr. A. N. Blodgett, of Boston; "The Management of Cases of Rigidity of the Os Uteri in Labor," by Dr. William E. Boardman, of Boston; "A Not Well Recognized Source of Domestic Poisoning," by Dr. Charles Harrington, of Boston; and "Albuminoid Cellulitis," by Dr. J. A. Meed, of Watertown.

At the annual meeting of the Councillors, held the same evening, by the reports of the Committee on Membership it was shown that there are at present sixteen hundred and five Fellows in good standing. The receipts of the year have been $10,452.42, the expenditures $8685.05, leaving a balance on hand of $1767.37.

The following officers were elected for the ensuing year: President, Thomas H. Gage, of Worcester; Vice-President, John M. Harlow, of Woburn; Treasurer, Frank N. Draper, of Boston; Corresponding Secretary, Charles W. Swan, of Boston; Recording Secretary, Francis W. Goss, of Roxbury; Librarian, E. H. Brigham, of Boston; Orator, G. J. Townsend; Anniversary Chairman, William L. Richardson.

On the second day, the one-hundred-and-fifth annual meeting of the Society was held. Papers were read as follows: "An Epidemic of Malaria in Eastern Massachusetts," by Dr. Z. B. Adams, of Framingham; "The Causation and Treatment of Lateral Curvature," by Dr. E. H. Bradford, of Boston; "Some of the Results of Fractures," by Dr. Joseph E. Garland, of Gloucester; "The Etiology and Treatment of Summer Diarrhœa of Infants," by Dr. H. C. Haven, of Boston.

The annual discourse, by Dr. R. M. Hodges, of Boston, was listened to with attention by a large audience. The subject was "Undercurrents in Modern Medicine." Among the many topics touched upon were the desirability of possessing some knowledge of biology and comparative anatomy prior to entering upon the study of medicine; a warning was also given lest the training-school system, admirable though it be, should result in inducing the practitioner to leave to the trained nurse administrative details and clinical observations which, in his own interest as well as that of the patient, should be attended to by the physician himself.

At the conclusion of the address the Fellows marched to the Skating-Rink in the vicinity, where some seven hundred or eight hundred sat down to the annual dinner. The presiding officer was Dr. E. B. Harvey, of Westborough; speeches were made by President Pillsbury, of the State Senate, Rev. M. J. Savage, Dr. Gage, of Worcester (the newly-elected President), Professor E. M. Hartwell, of Johns Hopkins University, and others.

The name of Dr. Hartwell reminds me to speak of the immediate purpose of his visit to Boston, which was to participate in a discussion recently held by the Section in Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society on the subject of military drill and other means of physical training in the public schools. In Boston, drill has been practised since the war by the boys of the higher schools, but little has been done in the way of bodily culture for the pupils in general. The subject was first taken up by this Society at the April meeting, when an animated discussion occurred on the merits of the drill, following a paper on the subject by Dr. C. F. Withington.

At a subsequent meeting—June 8—Professor Sargent, of the Hemenway Gymnasium at Harvard College, spoke strongly against the drill, claiming that it failed to meet any of the chief requirements of a proper developmental exercise, and illustrating in the persons of some young men the muscular exercise afforded by the manual of arms, performed with the trunk uncovered, compared with that obtainable from the dumb-bells, clubs, wand, and chest-weights. Professor Hitchcock, for many years in charge of the department of physical training at Amherst College, also spoke adversely to the drill and in favor of a more comprehensive and simple system. Professor Hartwell spoke in a very interesting manner of his personal observations of the complete and satisfactory method of physical training now compulsory by law in all the public schools of Germany, showing that it had proved itself to be feasible on the ground of wide adaptation and moderate expense, and also to have yielded admirable results. There are one thousand teachers in Berlin capable of giving such instruction and holding diplomas from the normal gymnastic schools. The general drift of this meeting was strongly against the drill and in favor of a more judicious method of physical training, which should apply to all scholars of both sexes.

The Brighton prize of two hundred dollars for the current year has just been awarded, by the committee appointed for that purpose by the President and Fellows of Harvard University, to Dr. Charles F. Withington, of this city, for an essay on "The Relation of Hospitals to Medical Education."

The newly-formed State Board of Health, of which I wrote in my last letter, has been organized by the appointment of the following members by the Governor: Dr. H. P. Walcott, of Cambridge, chairman; Dr. F. W. Draper, of Boston, medical examiner; Dr. E. A. Jones, of Taunton, homœopathist; Julius H. Appleton, of Springfield, manufacturer; Thornton K. Lathrop, of Beverly, lawyer; Hiram F. Mills, of Lawrence, civil engineer; James White, of Boston, retired merchant.

It is considered an exceptionally strong board,—which is fortunate, as many important matters are to be referred to it. W.

June 10, 1886.

BALTIMORE.

AT the last annual meeting of the Medical and Chirurgical Faculty of Maryland a committee was appointed to take into consideration the power possessed by the Faculty,

by virtue of its charter, to regulate the practice of medicine in this State. From the report of this committee, which has just been submitted, it appears that the Medical and Chirurgical Faculty, whose charter dates from the first year of the present century, has the legal authority to act as an examining board and decide upon the qualifications of those who desire to practise medicine in Maryland. This privilege has been unclaimed so long, however, that its resumption would probably not be permitted without a struggle by the many quacks who have found a refuge and a domicile here from the inhospitable treatment of the Examining Boards of Pennsylvania, Virginia, and West Virginia. The committee recommends that judicial proceedings be begun against the quacks who abound among us; but, inasmuch as that would require money in the shape of counsel-fees, it is not likely that the incrusted fossils who still have too much influence in the Faculty will lend their consent to any active prosecution. In fact, some of these veteran members seem to be at such times stanch friends of the quacks whom they abuse *ore rotundo* at other times. This was conspicuously manifested last winter, when a proposition was discussed to appeal to the Legislature to pass a medical law similar to the one which has worked so admirably in Illinois and other Western States. The fossils turned out in force and defeated the measure, compelling the committee, which had before been empowered to present it to the Legislature, to withdraw it even after it had passed its first reading. It was not overlooked at the time that a majority of the opponents of progress were those whose absence at the scientific meetings is fully compensated by their overwhelming presence when the annual election of officers takes place. I am free to express my conviction that an active attack of the resignation fever, if confined to the class above designated, would contribute very much to medical advancement in this State.

At the last session of the Legislature a law was passed authorizing the appointment of a Lunacy Commission. The Commission consists of five members, four of whom are physicians. The fifth member is the Attorney-General of the State. They have supervisory control of all public and private establishments where the insane are confined. Quarterly meetings of the board are to be held regularly, but special meetings can be called by two members. The members have similar powers to justices of the peace and coroners in matters connected with the insane. They serve without compensation, but their expenses, when on duty, are defrayed by the State. The executive officer of the Commission is a secretary, who is elected by the board, and who receives a salary of one thousand dollars per annum. His duties are to visit all the asylums for the insane, public and private, in the State twice a year, and report to the board. He shall make as many additional visits as may be demanded by circumstances.

The Commission met and organized a few weeks ago. G. H. R.

PROCEEDINGS OF SOCIETIES.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

STATED MEETING, THURSDAY, MAY 6, 1886.

The President, B. F. BAER, M.D., in the chair.

HOWARD A. KELLY, M.D., read a paper on

ASEPSIS, NOT ANTISEPSIS: A PLEA FOR PRINCIPLES, NOT PARAPHERNALIA, IN LAPAROTOMY.

Medicine, like other branches of science, has been most retarded in its growth by the accumulation of all sorts of useless details. Some of these incrustations still clog the advance of abdominal surgery, and will be given up with a notable diminution in the general percentage of mortality. I refer to the use of carbolic acid and mercuric solutions at the operating-table, and to the continued use of any elaborate abdominal dressing.

The use of antiseptics in the patient's belly is full of dangers and inconsistencies, for the following reasons:

First: If used in strength sufficient to certainly prevent sepsis, the patient is very often killed along with the germs. I have myself seen death from carbolic-acid poisoning. The *American Practitioner*, November, 1881, p. 260, quoted by Dr. Goodell: "The first four cases done in the theatre at the beginning of last session had hemorrhage from the kidneys, and two of them died. I never had anything like that before. It was purely carbolic-acid poisoning: of that I have no doubt whatever." Thomas Keith speaks of several cases in his own practice, and references might be indefinitely multiplied. Regarding the use of the bichloride solution, it is sufficient to say that its use has been very much curtailed in all maternity hospitals, even as a vaginal wash. The danger-line is here a very broad one, for the limit appears only to depend upon the most variable of all factors, the individual susceptibility.

Secondly: It is the great tendency of all operators, and in particular their assistants, to forget the principle involved and pin their faith to the accidental means of establishing it. This can be seen abundantly illustrated in almost any hospital in the land, where a clean napkin worked in and around the joints and grooves of the instruments in use, or carried under the nails of the operator's

fingers, will exhibit sad evidences of soil. Then, too, the actual conduct of the operator is often modified by the false sense of security begotten by the incomplete use of antisepsis. I saw this well illustrated by a surgeon of more than local repute. The case was a herniotomy in which a large femoral sac was opened. The spray was throwing out a dense cloud, instruments and sponges were immersed in a two-per-cent. solution of carbolic acid, and elaborate dressings were ready. A coil of intestine protruded from the wound for several inches, and it lay first on the old hospital-blanket below, and then, in the effort to reach the ring, was turned upon the night-gown above. The antisepsis was here made a farce by these and other glaring inconsistencies.

If germicides must be used at all, let it be before the operation, and in strength sufficient to neutralize any sepsis about instruments, sponges, etc. Then let the operator go to work with clean instruments, clean sponges, and clean hands, and he will need no antiseptic, and the patient's belly will no longer be a battle-field where germs and solutions fight, often with such direful results to the host. It is my belief that it will not be long before the day of solutions will be past, and that in the future the successful surgeon will go to his work with pure water or dry pans for his instruments and fluid enough to cleanse sponges. My own practice has been to use hydrant-water boiled for an hour and allowed to stand, or, better still, distilled water, as used by Professor Schroeder, and independently suggested and used by my friend Dr. Joseph Price. I do not believe that reservoir-water, dirty as it often is, ever contains any of the specific matter productive of septicæmia; but the process of boiling and using only the supernatant liquid makes it perfectly harmless.

Another fallacy discarded by some of the greatest operators, but perpetuated by many, is the transference of the use of the elaborate Listerian dressings of general surgery to the abdominal wound. These dressings, so manifold and multiform, are clearly intended to prevent sepsis from penetrating the now closed abdominal wound. This is an accident which fortunately never occurs in the intra-peritoneal method, the rapid agglutination of peritoneal surfaces effectively closing the sac. A sterile, dry powder will absorb the slight serous discharge at the edge of the wound and suture-exits, and above this some absorbent cotton and a firm bandage is all that is required.

While the danger of infection of the peritoneum through the closed wound is minimal, that of an infection of the belly-wall through stitch-holes is very great; and this is best prevented by the dressing recommended by Keith, of carbolic acid and glycerin, one to eight parts.

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With the mind thus freed from the notion that these solutions and dressings are accomplishing anything,—from two such dangerous fallacies,—operators at large will work with a living consciousness of the real conditions of success, and they will then be on the alert from the beginning of the operation to its close, keeping within the mental horizon an exact knowledge of everything coming into contact with the patient's belly.

The expression of my convictions and practice will be of value in so far as they are in accord with the following letters upon the subject by the two greatest abdominal surgeons in the world, Lawson Tait and Thomas Keith.

Lawson Tait, in a letter dated March 15, 1886, to the writer, says, "I still use tap-water and nothing else: it is never boiled. My instruments are prepared by being washed in soap and water merely. I use no elaborate dressings for the wound, never using anything at all except absorbent cotton-wool.

"Yours very truly, LAWSON TAIT."

From a communication from Thomas Keith, of Edinburgh, written March 16, 1886, I make the following extract: "The secret in abdominal surgery, the secret in all surgery, consists in carrying out the antiseptic principle. You may do this in a simple way or you may do it in a complicated way. All instruments, needles, forceps, sponges, etc., everything about the wound, must be disinfected. A weak carbolic solution applied to the wound can do no good—nor harm. You may safely use hot water. My instruments, after an operation, are scrubbed with a nail-brush, especially the forceps-points. This is repeated before the next operation with a five-per-cent. solution of carbolic acid. The greatest risk is that we put in septic matter on our hands, instruments, and sponges. Sepsis may come from the wound, but it rarely ever penetrates inside. I use a simple dressing of gauze, eight or ten folds soaked in one to eight carbolic acid and glycerin, extending two or three inches or so beyond the line of incision on all sides. Over this some ordinary cotton-wool, a flannel bandage, and nothing else. Use this, and you will never use anything else. And don't look at it for a week or ten days. You ought, for the patient's comfort, to put on an antiseptic dressing of some kind. You will probably often have suppuration with stitches if you do not. Yours sincerely,

"THOMAS KEITH."

DISCUSSION.

Dr. MONTGOMERY expressed his interest in Dr. Kelly's remarks, reinforced as they are by the letters from Tait and Keith. The antiseptic method of treatment has done a great work for surgery, and the successive steps of Listerism and cleanliness have brought it up to the comparative certainty of result now

attained. We can now eliminate almost entirely the antiseptic agents, carbolic acid, mercuric chloride, thymol, etc., and can do as well by the most rigid attention to cleanliness in all details of hands, instruments, sponges, and the skin of the patient. Some years ago he felt gratified that, in a patient upon whom he operated before a class at the Philadelphia Hospital, with Listerism and the carbolic-acid spray, the temperature did not rise above 102°. Now in his private hospital, with rigid attention to cleanliness and thorough washing of the peritoneal cavity with hot water, the highest temperature will be below 100°. After operations involving the opening of the peritoneal cavity, if there have been any opportunity for the escape into it of blood, pus, or cyst-contents, he washes it out thoroughly with hot water. After closing the wound, he covers it with sublimated gauze and absorbent cotton, and secures this with strips of plaster and a bandage. This dressing remains a week without need of disturbance. If gut-sutures or silk rendered aseptic by a coating of wax with carbolic or salicylic acid be used, there will be no trouble about suture-abscesses. In a recent case in which the abdominal walls were two inches thick from adipose deposits, these precautions were observed, and there was not the slightest suture-trouble. He does not now consider the spray of any value, because we cannot use carbolic-acid solutions strong enough to certainly destroy the germs without poisoning the patient, and the spray only washes the germs down into the wound.

Dr. CHARLES HERMON THOMAS remarked that the experiments of Dr. Sternberg, of Johns Hopkins College, a careful and conscientious observer, have developed the fact that some of the antiseptic solutions in common use, three-per-cent. carbolic acid for instance, actually stimulate the growth of bacteria. Perfect cleanliness is the essential point, the foundation of surgical success. He had seen Dr. Kelly operate without disinfectants, his instruments being placed in a dry pan, and his results proved the truth of the assertions he has made this evening.

Dr. M. PRICE had experienced great difficulty in his attempts to secure absolute cleanliness. He had seen half a dozen unclean hands introduced into a peritoneal cavity during operation, simply from curiosity; sponges picked up from the floor, napkins from a dusty window-sill, instruments from a soiled blanket, and each used on peritoneal or absorbent surfaces; sponges that have been filled with pus used again in the peritoneal cavity; and, in general, extreme thoughtlessness in the little details of cleanliness that compelled the full power of antiseptics to bring good results. He has had good results in pyosalpinx even when purulent cysts have burst in the abdominal cavity; but he allows only the operator's hands to enter that cavity, and practises the most thorough washing out with clean water. He has been burned by simply holding a carbolized ligature in his mouth for a few minutes, and feels sure that the retention of a number of such ligatures in the abdomen would be quite likely to give rise to trouble.

Dr. CHARLES MEIGS WILSON said cleanliness, by whatever means obtained, is the great element of success in abdominal surgery. As absolute cleanliness can best be obtained by the use of agents possessing germicidic and anti-putrefactive properties in the preparation of the atmosphere, the operator's person, the instruments, sponges, and dressings, it seems to be the part of wisdom to employ such agents up to the time of and even during the operation. With a perfectly clean room and furniture, clean air, clean instruments, and clean hands, possibly no antiseptic agent would be needed. But, unfortunately, such conditions do not universally or generally exist, and to attain them we must resort to the use of some efficient antiseptic. Care should be taken to employ some agent which is efficient and at the same time non-poisonous. In English and Continental hospitals, where excessive antiseptic precautions are employed, the success attained compared with the previous mortality-rate proves unquestionably the great value of such precautions. The united testimony of experienced American operators as to the value of antiseptic precautions should not be set aside. I believe that all instruments should be submitted to the purifying influence of dry or moist heat; that the towels, sponges, and dressings should be left for twenty-four hours in a boiling-hot solution of mercuric chloride (one to two thousand), and that the silk-worm gut or fine-wire sutures and ligatures should be kept in a very weak solution of carbolized oil. To my mind, the terms antiseptic and aseptic are synonymous. My own experience has taught me that the best and least dangerous antiseptic agents are those which possess rather an anti-putrefactive power,—*i.e.*, those which prevent or retard putrefactive changes,—rather than the more dangerous class of agents which possess decided germicidal powers.

Dr. PARISH: Antiseptics are not intended to take the place of cleanliness. The greater the care bestowed on cleanliness in all details, the less will be the need for antiseptics. Boiled water, filtered, is a good washing material. Patient, hands, and instruments must be clean to insure good results. Absorbent lint wet at the time of using with a one-to-two-thousand mercuric chloride solution is a good external dressing. Dr. Parish agreed with most of Dr. Kelly's statements, but he believes in the value of antiseptic vaginal injections after labor in hospitals. The maternity-wards of the Philadelphia Hospital showed a large number of deaths, varying

from three to ten per cent., for many years prior to 1885; but, last year, in two hundred and forty-seven cases of labor there were but two deaths. One of these was after Cæsarean section in a patient who had been in labor nearly three days before she was brought into the hospital. The other fatal case was in an idiot, and was largely from other causes than the labor, which was not at fault. These good results are due to the use of mercuric chloride injections principally, although we have now new wards and opportunity for frequent change of nurses when advisable. In a case of septicæmia following adherent placenta the patient seemed almost moribund; but hot uterine injections of mercuric chloride, one to four thousand, stimulated her and led to recovery. Water is boiled to destroy possible germs, and filtered to get rid of various impurities not held in solution.

Dr. M. PRICE thought the heat of the injection used by Dr. Parish was the most important element in stimulating the patient; but the mercuric chloride would do no harm, and the fact that improvement commenced and continued from that time is the important point. The reaction against the use of antiseptics should not be allowed to go too far. They have done great good, and cannot be discarded.

Dr. LONGAKER agreed with Dr. Parish, and regretted to hear any disparagement of antiseptics. No reputable maternity can be conducted without them. Dr. Lusk considers that the poor woman delivered in a hospital with the protection of antiseptics is safer than the rich woman in her home with every other safeguard but without them.

Dr. SOPER (formerly of the Rotunda, Dublin), upon invitation of the President, remarked that this was a very mixed question; that neither cleanliness nor antiseptics could be dispensed with. He had seen cases do well under all conditions without antiseptic precautions, and if the solutions are dangerous we must be cautious in their use. He believes thoroughly in cleanliness, and would use antiseptics when he thought them needed. It does not do to run into extremes.

Dr. KELLY replied, in closing the discussion, that he was both surprised and gratified that so many members of the Society had expressed their approval of his paper. In two or three instances, however, he had been grievously misunderstood. He believes it to be the great glory and the crowning triumph of *antisepsis* to have discovered *asepsis*. He had nothing whatever in common with those surgeons who claim that antiseptics have done nothing. The peritoneum is a vast, exquisitely-sensitive "culture"-sac. In the old time chance decided whether the uncleaned hand of the surgeon carried in suitable germs to multiply in the medium, and the chances were greatly against the patient. Now the use of antiseptics accidentally involves rinsings and cleansings which make the surgeon a clean man in spite of himself, and the patient generally escapes. In a more advanced position, and the one in which the surgeon is living up to a *principle*, the utmost precautions are taken by a preliminary use of antiseptics in sufficient strength, and he goes to his operation needing no germicides.

Let the battle-field be outside of the patient's belly, and the germicide will then be sure of the victory every time. Statistics from foreign maternities, as quoted, instead of proving against, are one of the strongest arguments for this position: for there the use of the germ-destroying agent is wholly *without* the patient's body.

Dr. M. O'HARA reported a case of

EXTRA-UTERINE PREGNANCY, WITH RUPTURE OF THE FALLOPIAN TUBE—LAPAROTOMY ON THE THIRTY-THIRD DAY—RECOVERY.

On September 25, 1885, Dr. O'Hara was called to see R. H., who had been in good health until seized, two hours previously, with severe rectal tenesmus, agonizing pains in the pelvis, pains from both flanks, and extending down the right leg and arm. From the tenesmus she thought she would have a stool, and rushed to the water-closet, but, no relief following, rushed to her room and fainted. She was carried to bed; rectal injections were given by those present, but no movement followed, and opiates were given for the relief of the pain. When I saw her she was in collapse, almost pulseless, respiration shallow, extremities cold. The whole surface was bedewed with a cold death-sweat. She could not lie on her left side or back, but reclined doubled up on her right side, and would jump up occasionally with exclamations of agony. The history hastily gathered gave the following data. R. H. was 30 years of age, mother of three healthy children, the youngest one year old; she was still nursing it. She had never been sick, and had menstruated regularly. One menstrual period had been missed about a week before the accident, and she considered herself pregnant.

The diagnosis was internal hemorrhage due to rupture of the Fallopian tube at the fifth week of pregnancy. Opiates and stimulants were used. The next day Dr. Parish was called in consultation and concurred in the diagnosis. There was still some shock; pulsation 130, feeble and irregular; respiration feeble; temperature normal; great pallor, evidently due to the loss of blood. The abdomen was moderately distended, with occasional cramp-like pains; moderate tenderness, but no symptoms of peritonitis. The patient showed signs of reaction, and laparotomy, though discussed, was deferred. Five days after the rupture the patient was able to bear a close examination. The abdomen was greatly distended; there was no tenderness on moderate pressure; resonance was gen-

eral except in right flank, where there was moderate dulness. There was no dulness in the left iliac and lumbar region excepting far back, near the kidney. There was an apparent bulging of the right flank. The vaginal surface was generally œdematous; the anterior wall of the vagina was thicker at the cervix and to the left. The cervix was moderately soft and patulous; no bulging of the posterior pouch. It was not deemed advisable to use the sound. The urine was almost black in color. Pulse 104; temperature 99°; respiration normal. Two days later a marked jaundice appeared, although occasional vomiting and purging of bile occurred. A few days later a swelling was noticed on both sides and in front of the cervix, and a bloody, painless discharge, containing decidua-like fragments, escaped from the uterus, and the dulness in the right iliac region disappeared. Urination became painful and difficult. The patient felt so much better that she desired to get up.

Three weeks after the first attack a terrible flooding occurred; it lasted for an hour, and slight hemorrhage continued afterwards. There was decidua in this discharge. At the same time the suprapubic tenderness extended towards the right and slightly increased on the left side, extending upward as high as the umbilicus. Chills and a rise of temperature to 101°, vomiting, constant sharp cutting pains, and emaciation with signs of softening along the crest of the ilium, and general appearances of blood-poisoning, occurred, and surgical interference was strongly urged as the only means of averting death. On the thirty-third day Dr. Parish operated, and he prepared the following report of the operation:

"There were present Drs. O'Hara, R. P. Harris, De F. Willard, and McElroy. I proposed to cut down directly on the tumor by an incision immediately above the outer portion of Poupart's ligament, believing that the tumor consisted of blood-coagula and pus located external to the peritoneum, and that the anterior parietal peritoneum had been dissected up to such an extent that the mass could be incised and emptied without opening into the peritoneal cavity, and without incurring the possibility of objectionable fluids reaching the serous surface. I also believed that the peritoneal cavity was clean, and that there had been no general peritonitis.

"The gentlemen present advocated a median incision for purposes of exploration, and in deference to their views I first cut through the linea alba just below the umbilicus, making an incision long enough to admit two fingers. The peritoneal cavity was found empty, and the peritoneum quite normal, though somewhat congested. The exploring finger showed that the mass was external to the peritoneum, and had extended upward from the left half of the pelvis to a level with the umbilicus. The broad ligament had become obliterated by separation of its layers. It was not thought advisable to explore with the finger with the view of determining the condition of uterus and ovaries and tubes. The peritoneal covering of the abnormal accumulation was evidently thin and tense, so that a careful exploration as to the condition of the uterine appendages would have endangered its rupture and the probable development of general peritonitis. It would have been an easy matter to have stitched the parietal wall of the tumor to the walls of the median incision, and to have then by incision emptied the mass of its contents. But such a procedure would have been attended with risk of leakage of the offensive fluid into the peritoneal cavity.

"To avoid this risk I now made another incision along the line of original election,—*i.e.*, above the outer border of Poupart's ligament,—and readily reached the mass-cavity without wounding the peritoneum. This incision was made long enough to admit two fingers. About one quart of blood-coagula, fluid blood, and pus escaped. The fibrinous masses were removed, and all attached portions were scraped off with the fingers. The curette was avoided chiefly because of the thin upper wall. The cavity was washed out with antiseptic fluid.

"The median incision was closed with sutures, and a drainage-tube was introduced into the mass-cavity. An incision could not have been safely made through the vagina, as the intervening tissue was too thick and its vascularity too great. The incision made admitted of more thorough emptying of the cavity."

The patient suffered no shock from the operation. There was a slight sanguinolent discharge, containing small clots, from the drainage-tube, amounting to about two ounces in twenty-four hours. Nourishment was taken fairly. The cavity left at the time of operation held thirty-two fluidounces. In two days it had contracted to one fluidounce, but the discharge was purulent and offensive. A bloody discharge from the uterus had continued since the operation, but was free from odor and diminishing. The last sutures were removed five days after the operation, and two days later the drainage-tube was replaced by a tent. Two weeks after the operation the uterine discharge had ceased, but free bleeding from the wound occurred. There had been no exertion, sneezing, or coughing to cause this hemorrhage, which occurred about eight weeks after the last menstruation; but, a week later, a bloody discharge occurred from the uterus and wound. The temperature rose to 103°. There was no pain on pressure, but there was a suspicious hard spot in the left iliac region. Twenty-four days after operation the patient was permitted to sit up, and while cheerfully singing felt blood streaming down her legs

from the wound; clots passed also from the uterus and rectum. She felt the rectal tenesmus and pains in right lower extremity similar to those felt at first seizure. Much blood was lost. A similar bleeding occurred three days later, and as life was endangered it was thought necessary to give ether and explore the cavity. It was found that the tissues had been dissected up by accumulated blood and pus until the cavity extended down the side and front of the uterus and communicated with the rectum at the upper end. The cavity was thoroughly scraped with a curette, and was then packed with alum-sponges after disinfection with Platt's chlorides. The patient reacted well. When the wound was injected, nothing came from the wound; but an injection into the rectum came out of the wound, and there was a fæcal odor about the wound. Next day the sponges were removed and muslin tampons wet with phenol sodique were introduced. The packing was changed twice each day. Discharges of offensive fæcal matter and a small gall-stone escaped from the wound.

On February 15, nearly four months after the operation, the patient is noted as doing uniformly well. The wound is closing, the exudation about the uterus and vagina is disappearing, and the odor and elimination of gas while dressing the wound have disappeared.

May 1. Patient has gained greatly in flesh, and presents the appearance of perfect health. A very small, short sinus alone remains. The communication with the bowel has closed entirely. Menstruation occurs normally, and there is no bleeding at any time from the wound.

DISCUSSION.

Dr. PARISH made a few remarks upon the history of this case and the difficulties surrounding a diagnosis. The patient was 30 years of age and perfectly healthy. She missed one menstrual period, and a week later, possibly in the fifth week of pregnancy, there were signs of internal hemorrhage with shock. Dr. O'Hara at this time made his diagnosis—doubtless correct—of tubal pregnancy with rupture of the cyst. The patient commenced after a few hours to rally. Dr. Parish was called in consultation the next day. He suggested an operation to remove the cause of the trouble, but did not urge it, as the symptoms had ameliorated. The patient continued to improve for several days. Afterwards a tumor appeared. The first hemorrhage, being into the folds of the broad ligament and limited, did not show; but as repeated hemorrhages occurred the tumor increased, pus formed, the embryo softened, septicæmia without peritonitis was developed, and then the operation was performed, and was then imperatively demanded. Three months after the original shock a sudden and nearly fatal hemorrhage occurred simultaneously from the wound, vagina, and rectum. Evidently there was a tubal communication between the uterus and the wound, and a large rectal fistula had formed. This fistula healed without any separate operation.

There was evidently at the beginning a pelvic hæmatocele without peritonitis, due to a ruptured Fallopian tube. The early operation was proposed, but did not meet with approval. It was evident the hemorrhage was extra-peritoneal, as it would most probably have been fatal if it had burst into the peritoneal cavity. He deprecated the expectant plan of treatment of cases of rupture of the cyst of tubal pregnancy; but in this instance the amelioration of the symptoms at the time when first seen by him led him to hesitate as to the necessity for immediate operation. The sequel showed that in this case an early laparotomy would have been of no service. The patient's recovery is complete.

Dr. HARRIS heard of this case a week after its commencement, and believed from what he knew of it at that time that it would be advisable to perform the laparotomy; but subsequent developments indicated that the hemorrhage was extra-peritoneal and gradual, and there was therefore no immediate danger to be overcome. When, however, he saw the patient, October 28, he was satisfied that her constitutional symptoms required that an exploration of the abdominal cavity should be made, the blood-cyst defined, and then that the blood should be evacuated above the left groin. This opinion being sustained in the consultation, the operation was performed accordingly.

Dr. PRICE inquired if any examination of the condition of the gall-bladder had been made at the time of operation. Was the jaundice due to mechanical obstruction or to the general condition?

Dr. BAER at first thought an error had been committed in not operating at first, when the diagnosis was made and the tube ruptured; but the full history puts the matter in a different light, and would cause great hesitancy about rushing in in a similar case.

Dr. O'HARA had made his diagnosis at the time of the accident. Operation could not have been performed then on account of the collapse, and after that passed away it did not seem called for until the time of its performance. One question has risen in his mind from the subsequent history of the case: Would it not have been better if the wound had been packed from the time of the operation?

SÄNGER'S CÆSAREAN OPERATION.

Dr. ROBERT P. HARRIS said, I desire through this Society to give publicity to the following statement, received a few days ago in a letter from Dr. Sänger, of Leipsic, from which it will be seen that his method now

stands unrivalled in the world in its ability to save human life. Locally considered, the Porro operation as performed in the Santa Caterina Hospital, of Milan, Italy, has until recently far exceeded in its proportionate success all other Cæsarean methods in any hospital or country; but this, the best of all Porro successes, has now to be rated second as compared with its younger German rival. Laparo-elytrotomy, a year ago, stood upon the same level with the Sänger operation in its rate of success; but now the latter far outstrips it in the number of times it has been performed and in its proportion of cures.

According to Dr. Sänger's letter, his operation, with its modifications and simplifications, has been performed twenty-five times, saving eighteen women, or seventy-two per cent., and resulting in twenty-two children being delivered alive, or eighty-eight per cent. In these are included three fatal American cases which, if not in an absolutely hopeless state before the operation, gave a very minimum hope of success. The European twenty-two operations saved eighteen women, or $81\frac{8}{11}$ per cent. In the Maternity Hospital of Leipsic Dr. Sänger has operated four times, Dr. Obermann once, and Dr. Donal once, saving all of the women and children; in but one woman was there any special trouble after the operation. Dr. Leopold, of the Dresden Maternity Hospital, has operated nine times, and Dr. Korn once; the former lost one woman, but all of the children were saved. Thus we have fifteen women and sixteen children saved under sixteen operations; a mortality for the former of only $6\frac{1}{4}$ per cent. Of the four deaths in Europe, two resulted from septic poisoning which existed at the time of the operation, and in the other two subjects it followed it.

Dr. Sänger has such confidence in his method, from the success that has attended it in Germany, that he believes the time has come when it should be preferred to craniotomy, because of its moderate fatality and its saving the child. We should be glad if all of the Cæsarean operations of the United States should be performed after Sänger's method, as simplified by Garrigues and Leopold; but we must not expect very happy results here until our accoucheurs become alive to the fact that delay in operating will make any method fatal in a large proportion of cases. In no country are the capabilities of the old Cæsarean operation greater than in the United States, and in few has this form of delivery been of late more uniformly fatal. To find eighteen recoveries under it we must search backward to January, 1863, and through a record of time covering more than twenty-three years; in which period seventy-three operations have been performed, proving fatal in about seventy-five per cent. This occurred notwithstanding an established fact that a set of early operations will save seventy-five per cent. of the women and still higher of the children in such cases in the United States.

(To be continued.)

PHILADELPHIA CLINICAL SOCIETY.

A STATED meeting was held May 28, 1886, the Vice-President, DANIEL LONGACRE, M.D., in the chair.

Dr. Longacre read a paper entitled "Retarded Dilatation of the Os Uteri a Symptom of Faulty Mechanism. Illustrated by Presentations of Brow and Face, Occipito-Posterior, Transverse, and Breech Presentations." The paper will be published in full at a future date.

Dr. Clara Marshall reported a case of

MAMMARY ABSCESS DURING PREGNANCY IN A PRIMIPARA.

Lizzie H., German, æt. 27, single, domestic, pregnant, with a family history of phthisis (her father and mother having died of that disease), was admitted to the surgical department of the Philadelphia Hospital January 21, 1884.

When admitted, she was suffering from an affection of the right breast. Examination of the lungs revealed the presence of incipient phthisis. As the patient did not come under my care until confinement, Dr. Joseph Hoffman, interne, kindly furnished me with some brief notes of the case, from which I quote.

"The right breast was greatly enlarged, and its appearance so far suggested malignant disease that the idea of excision was contemplated. With this in view a consultation was held, resulting in the abandonment of the cancerous view, and mammitis was diagnosticated, the correctness of which diagnosis the subsequent history justified.

"Poultices were applied, and in a few days pointing occurred and the abscess was opened. Soon two or three other points of suppuration were observed, and the pus was evacuated by incision. In the mean time, the breast was supported in a mammary sling. March 1 the treatment of the case by means of compressed sponge (after the method of Foster) was instituted. This treatment for the first week seemed to act favorably, but at the end of that time so much pain was experienced that the dressing was of necessity abandoned, and the poultices were reapplied. During the time of the application of the poultices, and subsequently, large quantities of pus were evacuated by free incisions. Adhesive strips were now applied, with the effect of relieving pain by the support which they gave, and at the same time the pressure aided in the evacuation of the pus. Within a week they were of necessity removed, several points of inflammation having appeared beneath them, with the production of much pain; the pain was relieved by several incisions, resulting in the evacuation of nearly a pint of pus."

Throughout the progress of the case opiates had to be used to a considerable extent;

the medication also included quinine, iron, whiskey, and, later, cod-liver oil. No temperature-chart was kept, but a rise above the normal was noted at intervals, coinciding for the most part with the accumulation of pus, and abating as soon as this was evacuated. The highest temperature noted was 104° F.

The swelling of the breast, which began about two weeks before her admission to the hospital, the patient attributed to having taken cold, though there was no history of a chill.

The patient was admitted to the obstetrical department April 23, 1884, and upon the same date, after a normal labor, she was delivered of a poorly-nourished male child, weighing five pounds and twelve ounces. This infant was never healthy, and died May 5 (twelve days after birth).

From May 1 (seventh day after confinement) the treatment consisted in extending the various openings by free incisions and by packing the sinuses with lint soaked in carbolized oil; subsequently a drainage-tube was inserted into the one deep central sinus, and carried down to its deepest part; through this tube a solution of corrosive sublimate (one to one thousand) was injected daily, the injection being continued until the solution returned free from pus. During the intervals the mouth of the tube was protected by a layer of lint saturated with the corrosive-sublimate solution. The other sinuses were also washed out and packed with lint wet with carbolized oil. The breast was firmly dressed daily with adhesive plaster. The pus became healthy in character and diminished in quantity, and the sinuses healed, with the exception of the central one. The patient's condition improved, and she was able to leave her bed and walk about the hospital grounds.

July 1. The central sinus is yet unclosed.

July 14. The breast is somewhat indurated, but every sinus is healed.

The infrequency of mammary abscess in pregnancy, as compared with its occurrence in the puerperal state, is illustrated by the statistics of Mr. T. W. Hunn, surgeon to the Middlesex Hospital. Of Mr. Hunn's seventy-two cases, fifty-eight occurred during lactation, seven during pregnancy, and seven in women who were neither pregnant nor in lactation. The points of suppuration in the case I have reported were so numerous that it would be of great interest had there been obtained an accurate estimate of their number. Velpeau records a case which he thus describes: "The breast looks like a large sponge impregnated with pus, or like the nozzle of a watering-pot,—there being fifty apertures for the escape of pus."

Apropos of the suggestion of malignancy early in the case, I may again quote Velpeau, who says, "Such a mistake was committed a few years ago in one of the great hospitals of Paris, by one of the most eminent and experienced practitioners." Sir Astley Cooper reports a similar case, and says, "I could point to other cases. This mistake is more liable to occur when the abscess is *chronic* in character."

DISCUSSION.

In the discussion which followed the report of Dr. Marshall's case, Dr. Daniel Longacre said that he was in the habit of using Billroth's method in the treatment of mammary abscess: "Open every sinus freely, clean out the necrosed tissue, wash out the sinuses, and then apply an antiseptic dressing."

Dr. Susan P. Stackhouse reported the case of a mammary abscess in an unmarried non-pregnant woman. "C. M., æt. 20 years; right mammary gland twice the size of the left; very painful; fluctuation easily detected. The patient was very much excited, and when told that it would be necessary to lance the breast made considerable resistance. Finally she allowed the abscess to be opened, and a free flow of pus followed, after which there was great relief. The subsequent history of the case was without interest. The abscess had been developing for four weeks, and the patient's friends told her that it must be a cancer. There was no pain in the part until the fourth week, the swelling being the only symptom. The patient was thoroughly examined, but no symptoms of pregnancy could be detected."

Dr. Calista V. Luther mentioned a case of threatened mammary abscess in a male, which was aborted by means of the use of bandages and cold compresses.

Dr. Mary Willits related a case which had come under her observation. The patient would not permit the lancet to be used; as a consequence the abscess had opened spontaneously in *four* separate places; from each of these there was a free discharge of pus and milk for some days. At present there is no discharge of pus, but the milk is flowing freely all the time, the patient's clothing being kept saturated. The breast was bandaged with strips of adhesive plaster, having in view the bringing of the edges of the sinuses in contact, and hoping to hasten their union in this way; but in a few hours these strips were entirely loosened, owing to the flow of milk. Dr. Willits asked if the members of the Society could suggest any means by which to hasten the healing of the parts. It is not desirable to *arrest* the *secretion* of milk, as the patient has an infant three months old.

Dr. Mary E. Allen suggested compression of the gland by means of the roller-bandage. She spoke of a case of her own where firm compression was made by means of the bandage, and no milk came into the gland.

Dr. Daniel Longacre referred to Dr. Philander Harris's plan of the treatment of mastitis by bandaging and rest, an account of which appeared in the *American Journal*

of Obstetrics, in the January and February numbers for 1885.

Dr. Clara Marshall would suggest the use of compressed sponge in the case mentioned by Dr. Willits,—*e.g.*, applying the sponge *dry*, securing it firmly by means of a roller-bandage, and then moistening it. The swelling of the sponge, caused by the moisture, causes great pressure on the gland, which will bring the edges of the sinuses together, and thus hasten union. In this case the flow of milk would be apt to produce enough moisture. In a chronic abscess, where there is no pain, compressed sponge acts very nicely.

MARY WILLITS, M.D.,
Reporting Secretary.

REVIEWS AND BOOK NOTICES.

DRUGS AND MEDICINES OF NORTH AMERICA. A Publication devoted to the Historical and Scientific Discussion of Botany, Pharmacy, Chemistry, and Therapeutics of the Medicinal Plants of North America, their Constituents, Products, and Sophistications. Vol. I., RANUNCULACEÆ. J. U. LLOYD, Commercial History, Chemistry, and Pharmacy; C. G. LLOYD, Botany and Botanical History. Cincinnati, J. U. & C. G. Lloyd, 1884–85.

The completion of the first volume of the "Drugs and Medicines of North America" calls for an appropriate notice. The work has been issued in fasciculi, appearing quarterly, at the very low price of one dollar a year. The nine parts which have been issued complete the consideration of the Ranunculaceæ, and form a handsome volume of over three hundred pages. Among the special contributors are found some of the leading authorities on botany, pharmacology, and therapeutics in this country. The illustrations, many of them full-page, are well executed, and add very much to the value of the work, which has not only been carefully prepared from data obtained from all sources, but is also beautifully printed on heavy toned paper.

It is hoped that the profession will appreciate the enterprise of the publishers in bringing it out, and by general subscription insure its support.

A TREATISE ON THE DISEASES OF THE NERVOUS SYSTEM. By WILLIAM A. HAMMOND, M.D., etc. With One Hundred and Twelve Illustrations. Eighth Edition, with Corrections and Additions. New York, D. Appleton & Co., 1886. 8vo, cloth, pp. 945.

The work of revision of the eighth edition of this very successful and popular treatise on Diseases of the Nervous System has been thoroughly done, and a new section added on "Certain Obscure Diseases of the Nervous System." We notice, however, that in the section on Hydrophobia reference to Pasteur's experiments has been omitted, while the opinion is expressed that "the poison in the saliva, and not the wound made by the animal's teeth, is the essential influence in producing hydrophobia. It is not at all certain, however, that the latter may not in some cases produce a modification of the characteristics of the disease, perhaps causing those tetanoid phenomena which are occasionally present." "The nature of the virus," he declares, "is unknown. It is probably of the nature of a ferment, but this cannot be regarded as satisfactorily proved."

The work is freely illustrated, and the extensive knowledge of nervous diseases possessed by the author is communicated in such an interesting style that the position which it has maintained as a text-book for the last fifteen years is easily understood.

THE PRINCIPLES AND PRACTICE OF SURGERY. By FRANK HASTINGS HAMILTON, A.M., M.D., LL.D. Illustrated with Four Hundred and Seventy-Two Engravings on Wood. Third Edition, Revised and Corrected. New York, William Wood & Co., 1886. 8vo, pp. 989.

Thirteen years have elapsed since the second edition of Hamilton's Surgery was welcomed by the profession. During that period a revolution has taken place in surgical methods and the field of operative surgery wonderfully extended. The present edition has the advantage of the author's extensive experience and study, the results of which are evident in his thorough work of revision.

The work is divided into two parts, General Surgery and Regional Surgery. In the first part are considered surgical pathology, wounds, venereal diseases, lesions of the nervous system, aneurisms, as well as fractures, dislocations, amputations, excisions, diseases of bones and joints, deformities, and tumors; the second part takes up the surgery of different organs and regions of the body systematically, ending with a consideration of anæsthetics and a disquisition upon the art of primary union and the value of antiseptics in obtaining union by adhesion in large incised wounds. The views of the author are positively held and forcibly expressed, and, although it is not expected that they will be all received without question, yet the ability and experience of the author will at least entitle them to careful consideration.

DISEASES OF THE STOMACH AND INTESTINES. A Manual of Clinical Therapeutics for the Student and Practitioner. By PROFESSOR DUJARDIN-BEAUMETZ. Translated from the Fourth Edition by E. P. HURD, M.D. With Illustrations and One Chromo-Lithograph.

HAND-BOOK OF PRACTICAL MEDICINE. By DR. HERMANN EICHHORST, Professor of Special Pathology and Therapeutics and Director of the University Medical Clinic in Zurich. Vol. I. Diseases of the Circulatory and Respiratory Apparatus. One Hundred and Three Wood-Engravings. Vol. II. Diseases of the Digestive, Urinary, and Sexual Apparatus. William Wood & Co., New York, 1886.

INSANITY AND ITS TREATMENT. Lectures on the Treatment, Medical and Legal, of Insane Patients. By G. FIELDING BLANDFORD, M.D. Oxon. Third Edition. Together with Types of Insanity: An Illustrated Guide in the Physical Diagnosis of Mental Diseases. By ALLAN MCLANE HAMILTON, M.D., etc.

DISEASES OF THE SPINAL CORD. By BYRON BRAMWELL, M.D., F.R.C.P. Edin. Fifty-Three Colored Plates and One Hundred and Two Fine Wood-Engravings. Second Edition.

THE GENUINE WORKS OF HIPPOCRATES. Translated from the Greek, with a Preliminary Discourse and Annotations, by FRANCIS ADAMS, LL.D., Surgeon. In Two Volumes.

This admirable selection of standard works of reference comprises the issues of Wood's Medical Library for the first seven months of 1886. They are clearly printed and neatly bound and well illustrated. The services of this enterprising firm, in popularizing good medical literature by placing it in attractive form and at a low price, are quite generally appreciated and acknowledged by the subscriptions to the library, which improves every year.

NEW REMEDIES AND CLINICAL NOTES.

THE RELATION OF CHOLERA TO SCHIZOMYCETE ORGANISMS.—Surgeon-Major D. D. Cunningham reports the result of the examination of alvine evacuations in cholera. The cultivations were carried out with agar-agar, 1.5 per cent., as gelatin did not afford a medium which remained solid at the temperature of the air in Calcutta at the period when the investigation was conducted. Plate-cultivations were made from intestinal materials from twenty-two cases. A development of commas occurred in sixteen; in one of the other cases it subsequently turned out that the case was not one of cholera; in two others the nature of the material was doubtful; in two others the agar-agar had an acid reaction. There remained, therefore, only one case where undoubted cholera material in a favorable medium did not give a recognizable crop of commas; in this case colonies of minute straight bacilli abounded. In one case where no commas could be recognized in the original material, plate-cultivation yielded a crop. The general conclusion on this point is "that the belief in the presence of easily-cultivable commas as a very constant and characteristic feature in the dejections and intestinal contents in cases of the disease is a well-founded one." Thirty-three samples of normal alvine materials were examined, and curved schizomycete organisms were found to be present in varying numbers in every case. In cultivations made from those materials colonies of various kinds, some presenting to the naked eye appearances closely resembling colonies of Koch's comma-bacilli, developed, but in no instance did the true comma-bacilli appear. Neither did any development of true comma colonies occur when cultivations were made from the contents of the cæcum of healthy guinea-pigs, though this material contained many curved organisms. The ponds in and around Calcutta are covered by a scum of Euglenæ except during the rains. The under surface of this scum is a favorable site for the development of schizomycete organisms; among these are many curved forms. Cultivations from this material in feeble alkaline agar-agar jelly yielded colonies of distinct commas.

By cultivating comma-bacilli in various media, Dr. Cunningham succeeded in obtaining varied vacuolate forms, some circular, others elliptical, such as Dr. Klein noticed in cultivations made at low temperatures. Dr. Cunningham found the vacuolation and multiplication by longitudinal splitting to be associated with acidity or partial exhaustion of the nutrient medium. By transplanting again into alkaline media and cultivating in series, typical comma colonies were obtained again on about the fourth plate. Dr. Cunningham believes that the comma-bacillus is polymorphic, and that its absence can only be demonstrated by carrying out a series of cultivations in media highly favorable to its development. Otherwise, he contends, it is impossible to prove that forms capable of being developed by such successive cultivations into typical comma-bacilli may not have been present in the original materials.—*London Medical Record.*

A CASE OF HERNIA OF THE BLADDER THROUGH THE VULVA, WITH STRANGULATION.—The patient was a woman with deformed pelvis, who, after a severe labor, had an enormous vesico-vaginal fistula. She had consented to an operation for the obliteration of the vulvar orifice, but left the hospital before this could be done. The following year she returned in a very bad state. On exam-

ination, a tumor of the size of an orange, of a violet color, was seen protruding between the labia, and this turned out to be the bladder gripped at the entrance to the vagina. Any manipulation of the tumor was attended with great pain and considerable hemorrhage. The obliteration of the vaginal aperture was again suggested, and this time was agreed to and performed under an anæsthetic. The labia minora and the internal surface of the labia majora were cauterized by means of the thermo-cautery, in order to secure large granulating surfaces. These were approximated by means of sutures carried right through, and the labia of the opposite sides were brought securely into contact. Obliteration of the vulvar orifice was thus obtained, a small orifice being left below the meatus urinarius. After the operation no urine escaped while the woman was recumbent, and only to a small extent when erect. It was proposed to fit on a sort of receptacle, but she left before this had been prepared. Some months later, she returned once more as bad as ever. The vesical hernia and strangulation had recurred; and although the vulvar orifice was smaller than in the first instance, the effect of the former operation had been almost entirely destroyed, the husband and the surgeon having apparently worked at cross-purposes. Dr. Polaillon considers the case of interest on account of its rarity.—*Archives de Tocologie.—London Medical Record.*

MISCELLANY.

MEDICO-CHIRURGICAL COLLEGE.—The following preliminary announcement has been issued. During the last five years the Medico-Chirurgical College, which was chartered by the Legislature in 1850, has been located at the southwest corner of Broad and Market Streets. The needs of this rapidly-developing institution have outgrown its present quarters, and for some time the trustees have been looking for more commodious buildings. Recently they purchased a large property on Cherry Street, near Logan Square. The location is most excellent for the intended purpose, being near the centre of the city, and yet sufficiently retired to give students and hospital patients the requisite quietude. The lot is one hundred and thirty-four feet square. It is partly occupied by two large and substantial brick buildings, three stories high, with good light on all sides. Extensive alterations will be made, including the construction of an amphitheatre, clinical lecture-room, laboratories, and dissecting-room, besides all the departments of a well-appointed hospital. The lecture-room will be fitted up with an eye to the comfort of the students, individual chairs replacing the benches usually supplied. The rooms for practical work will have all their fittings of the latest and most approved pattern. The hospital-wards will overlook and have easy access to the large garden attached. Plans for the alterations are now being prepared by the architect, and when finished the corporation will have one of the most complete college-buildings in the country.

The following institutions will be associated with the Medico-Chirurgical College in the ample bounds of this newly-acquired property: the Medico-Chirurgical Hospital, the Philadelphia Dental College (which is now at Tenth and Arch Streets), the Hospital of Oral Surgery, and the Philadelphia Hospital for Skin-Diseases. The two last named will be continued as departments of the College and Hospital.

Several notable changes have lately taken place in the Faculty of the Medico-Chirurgical College. Professor William H. Pancoast, who for twenty-seven years taught anatomy at the Jefferson Medical College, was elected by the trustees and has accepted the same chair in the Medico-Chirurgical College. He brings with him the valuable anatomical museum collected by himself and his father. Dr. John V. Shoemaker, lately Lecturer on Dermatology and Teacher of Skin-Diseases in the Post-Graduate Course at the Jefferson College, has become Professor of Dermatology and Venereal Diseases in the Medico-Chirurgical Faculty. Dr. E. E. Montgomery, Obstetrician to the Philadelphia Hospital and Surgeon to the Women's Hospital, has been elected Professor of Gynæcology. Dr. William B. Atkinson has been elected Professor of Pædiatrics and Sanitary Science.

Some other changes of interest will be found in the annual announcement of the College, which has just been published.

PROPOSED PUBLIC-HEALTH LEGISLATION IN FRANCE.—In the French Chamber of Deputies, M. Siegfried has introduced a proposition involving decided changes in the laws governing the organization and the administration of the public-health service. The decline in the birth-rate in France, and the rapidly-diminishing excess of the births over the deaths, has led men of all political views to unite in support of measures calculated to render more efficient and uniform the laws relating to public health. The Academy of Medicine, and other scientific bodies, have adopted this resolution: "Following the example of the majority of foreign countries, the administration of state medicine should be intrusted in France to a single, independent, administrative direction, competent and responsible as well in relation to the central power as in the departments and in the large cities."

The present proposition is based essentially upon the draft of a law prepared in 1884 by the Comité consultatif d'Hygiène publique,

under the presidency of M. Brouardel. The several sections of the proposed law (1) specifically define the duties of the public-health administration; (2) institute a single direction of the administration of the public-health service; (3) create a service of agents of public health; (4) govern the formation of councils and commissions of public health (at the head would be a national council with six consultants; secondly would come departmental councils and health-commissions of variable number for each department); (5) direct that the deliberations of the several councils shall be transmitted at once to the competent administration, which shall communicate their decisions to the persons interested within a week. A laboratory would be placed under the control of the National Council of Public Health.

The editor of *La France Médicale* dwells upon the capital importance of this proposed legislation, and speaks in very favorable terms of the prospect of its passage by the Chambers.

THE USE OF PURE PEPSIN.—The Pharmacopœia recognizes only pepsinum saccharatum; but the digestive power of the saccharated pepsin dispensed by the druggist does not, we fear, uniformly correspond to the requirements of the Pharmacopœia. This variability in the power of the ferment has led some physicians to doubt or even deny the therapeutic value of pepsin; but a test of the pure preparation, as in the form of Jensen's Crystal Pepsin, will prove its great value in digestive derangement due to gastric debility. It is most efficient when given in recent solution in combination with hydrochloric acid and syrup of orange, though it may be given in the form of tablets if preferred, each containing two and a half grains. Its solvent power has been utilized by surgeons in digesting a blood-clot in the urinary bladder, and by physicians in dissolving false membrane, especially in diphtheria. It has been injected into the interior of morbid growths with encouraging results.

MICROBE OF RABIES.—Dr. G. F. Dowdeswell makes the positive announcement in the *Lancet*, that he has discovered a micrococcus in the spinal cord of dogs suffering with rabies, which he regards as specific and characteristic. It exists principally around the central canal of the cord and medulla oblongata, and thence extends along the blood-vessels, and in some cases was found within the blood-vessels. It was found in very small numbers in the cortex of the hemispheres, and only in the perivascular and pericellular lymph-spaces.

The organism is not shown by ordinary staining agents, and has therefore escaped the search of previous observers. Preparations of the microbe were shown at the Royal Microscopical Society at its June meeting.

THE AMERICAN OTOLOGICAL SOCIETY.—At the nineteenth annual meeting of this Association, held at New London, Connecticut, July 20, 1886, the following officers were elected for the ensuing year: President, J. S. Prout, M.D., of Brooklyn, New York; Vice-President, Samuel Sexton, M.D., of New York; Secretary and Treasurer, J. J. B. Vermyne, M.D., of New Bedford, Massachusetts; Committee on Membership, Gorham Bacon, M.D., W. S. Little, M.D., and E. W. Bartlett, M.D.

THE AMERICAN OPHTHALMOLOGICAL SOCIETY.—The twenty-second annual meeting was held at New London, Connecticut, July 21 and 22, 1886. The following were elected for the ensuing year: President, W. F. Norris, M.D., of Philadelphia; Vice-President, H. Derby, M.D., of Boston; Secretary and Treasurer, O. F. Wadsworth, M.D., of Boston. A number of interesting papers were read at these meetings. Abstracts of the principal ones will appear later.

The next place of meeting was left to the decision of the Council.

THE AMERICAN NEUROLOGICAL ASSOCIATION.—At the twelfth annual session, held at Long Branch, July 21 to 23 inclusive, the following officers were chosen for the year: President, Landon C. Gray, M.D., of Brooklyn, New York; Vice-President, John Van Bibber, M.D., of Baltimore; Secretary and Treasurer, Graeme M. Hammond, M.D., of New York; Counsellers, B. Sachs, M.D., of New York; Wharton Sinkler, M.D., of Philadelphia.

THE LOCAL COMMITTEE OF ARRANGEMENTS OF THE NINTH INTERNATIONAL MEDICAL CONGRESS has completed its organization. Dr. A. Y. P. Garnett is chairman, Dr. J. M. Toner vice-chairman, and Dr. C. H. A. Kleinschmidt secretary. The President of the United States, the Secretary of State, and the presiding officers of the Senate and House of Representatives have authorized the use of their names as patrons of the Congress.

MALTINE WITH CASCARA SAGRADA (RHAMNUS PURSHIANA).—The Maltine Manufacturing Company by an improvement in preparation now present Maltine in a state less viscid and more acceptable than formerly. They have also introduced some new formulæ, prominent among which is a combination of malt with cascara, making a safe and agreeable laxative for chronic constipation.

A COMBINED TONIC AND NUTRIENT.—The liquid beef tonic of Mr. T. Colden, of Baltimore, has been before the profession for a number of years. It contains saccharine, albuminous, and bitter principle in a spirituous solution, and it has been found extremely useful in cases of debility and general depression.

PASTEURIZATION DISCONTINUED IN NEW YORK.—We learn that in the case of the boy who was supposed to have been bitten by a rabid dog, Dr. Mott has discontinued his inoculations on account of the state of nervous agitation which they excited in the subject.

NOTES AND QUERIES.

THE EFFECTS OF ATROPINE AND WHISKEY IN A CASE OF CARBOLIC-ACID POISONING.

TO THE EDITOR OF THE PHILA. MEDICAL TIMES:

On May 4 I assisted Drs. Fowler and Potter, two well-known physicians of this city, in a perineorrhaphy, the laceration involving the sphincter ani and about two inches of the recto-vaginal wall. The patient, Mrs. L., was a lady 22 years of age, well nourished, quite obese in fact; had been married three years, but had given birth to but one child,—eighteen months previous to date of operation, at which time the laceration occurred. The results of the operation were perfect, and on May 12 we visited our patient for the purpose of removing the sutures. When within a short distance of the house we were met by a sister of the patient, who informed us that the nurse, by mistake, had given the "wrong medicine," and on reaching the house we were told that the nurse had intended giving the patient a tablespoonful of a mixture of potassium bromide, but instead of this had given a tablespoonful of pure carbolic acid. The mother, seeing a mistake had been made, seized the spoon and placed it to her lips to make certain as to what had been given; the result was considerable excoriation of lips and tongue. When we reached our patient, within ten minutes of the time when the dose had been taken, she was unconscious, cyanotic, almost pulseless, respiration rapid and irregular, with mucous râles throughout both lungs. The mother had given her several ounces of olive oil. We felt the case to be hopeless, but, more to satisfy the friends than from any expectation of favorable results, we administered by hypodermic injection two minims of sol. atropiæ (gr. iv to ℥i) and two drachms of whiskey. Within ten minutes of the time the injections were given the pulse and respiration had improved decidedly, and the constitutional effects of the atropine were marked. In half an hour the patient became conscious, vomited freely, with hæmatemesis. Milk was given in teaspoonful-doses at short intervals. Injections of brandy were continued, and later in the evening another dose of atropia. No saccharated calcium was used in the case.

By the afternoon of the following day Mrs. L. had so far recovered that we decided to remove the stitches, and, aside from the soreness of the mouth, some diarrhœa, and more or less pain in stomach and intestines (which was easily controlled by morphine), no unpleasant symptoms manifested themselves. The carbolic acid was freely eliminated by kidneys and skin, the discoloration of the urine and odor of the perspiration being noticeable for several days. Within three days the patient was sitting up, and is now entirely well.

Yours, etc.,
S. E. BASCOM.

SALT LAKE CITY, UTAH, May 20, 1886.

LARGE TUMORS AND GAS.

DEAR MR. EDITOR,—I have been much interested in reading the accounts of the very large tumors, some of which have lately been extracted, as the dentists say, with *gas*. In my elegantly-appointed private hospital (terms reasonable, circulars sent on application) I also extract with *gas*. On one occasion a very grievous accident happened to a patient, a lady of wealth and great refinement. After having extracted a truly enormous tumor, weight, with contents, guessed at, or, rather, accurately estimated at two hundred pounds, I directed my assistants to place the patient in bed. Having replaced my instruments in my case, I went to the bed to examine the patient, and was somewhat astonished to find that my assistants had mistaken the largest portion of the patient, which was the tumor, for the patient, and placed it carefully in bed, surrounded with bottles of hot water. The patient, weighing but a few pounds, was found in a tub in the yard swimming about in the contents of her own tumor.

My Extracting Hospital is in good condition, and well provided for the extraction of tumors of all kinds.

Very truly yours,
SIMKINS, M.D.

P.S.—The *contretemps* reported above is not likely to occur again, as the assistants were at once discharged.

OFFICIAL LIST

OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U.S. ARMY FROM JULY 18, 1886, *TO JULY* 31, 1886.

COLONEL GLOVER PERIN, ASSISTANT SURGEON-GENERAL.—Leave of absence extended one month. S. O. 165, A. G. O., July 19, 1886.

COLONEL JOSEPH B. BROWN, SURGEON.—Retired from active service July 26, 1886. S. O. 171, A. G. O., July 26, 1886.

MAJOR J. R. GIBSON, SURGEON.—Ordered from Department of the East to Department of Missouri on expiration of leave of absence granted in S. O. 158 (c. s.), A. G. O. S. O. 168, A. G. O., July 22, 1886.

MAJOR EDWIN BENTLEY, SURGEON.—Ordered for duty as post-surgeon, Fort Davis, Texas. S. O. 92, Department of Texas, July 22, 1886.

MAJOR WILLIAM H. GARDNER, SURGEON.—Granted four months' leave, to take effect August 10, or as soon thereafter as his services can be spared. S. O. 165, A. G. O., July 19, 1886.

MAJOR M. K. TAYLOR, SURGEON.—Granted leave of absence for one month, with permission to apply for one month's extension. S. O. 77, Department of Missouri, July 24, 1886.

MAJOR PASSMORE MIDDLETON, SURGEON.—Ordered to the Department of the East from Department of Missouri. S. O 168, A. G. O., July 22, 1886.

MAJOR CALVIN DE WITT, SURGEON.—Assigned to duty at Fort Sully, Dakota. S. O. 66, Department of Dakota, July 14, 1886.

CAPTAIN JOHN M. DICKSON, ASSISTANT-SURGEON.—Ordered from Alcatraz Island, California, to Fort Mason, California.

CAPTAIN JOHN J. COCHRAN, ASSISTANT-SURGEON.—Ordered from Fort Mason, California, to Presidio of San Francisco.

CAPTAIN A. J. GIBSON, ASSISTANT-SURGEON.—Ordered from Fort Winfield Scott, California, to Alcatraz Island, California, on return from leave of absence. S. S. 56, Department of California, July 8, 1886.

CAPTAIN JOSEPH B. GIRARD, ASSISTANT-SURGEON.—Granted leave of absence for three months, with permission to go beyond sea. S. O. 170, A. G. O., July 24, 1886.

CAPTAIN SAMUEL Q. ROBINSON, ASSISTANT-SURGEON.—Ordered for duty as post-surgeon, Fort Brown, Texas. S. O. 92, Department of Texas, July 22, 1886.

CAPTAIN J. J. KANE, ASSISTANT-SURGEON.—Ordered from Fort Ringgold, Texas, to Fort Hancock, Texas. S. O. 85, Department of Texas, July 13, 1886.

CAPTAIN WILLIAM F. CARTER, ASSISTANT-SURGEON.—Ordered from Fort Concho, Texas, to Fort Ringgold, Texas. S. O. 85, Department of Texas, July 13, 1886.

LIST OF CHANGES IN THE MEDICAL CORPS OF THE U.S. NAVY FROM JULY 24, 1886, *TO JULY* 31, 1886.

PASSED ASSISTANT-SURGEON G. P. LUMSDEN.—To duty at Marine Barracks, Washington, for the month of August.

ASSISTANT-SURGEON F. J. B. CORDIERO.—Ordered to Receiving-Ship "Minnesota."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U.S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDING JULY 31, 1886.

CARMICHAEL, D. A., PASSED ASSISTANT-SURGEON.—Granted leave of absence for thirty days, July 24, 1886.

MAGRUDER, G. M., ASSISTANT-SURGEON.—To proceed to Cairo, Illinois, for temporary duty, July 22, 1886.

LONG, W. H., SURGEON.—Granted leave of absence for fifteen days, July 30, 1886.

SAWTELL, H. W., SURGEON.—To proceed to Portland, Oregon, and Port Townsend, Washington Territory, as inspector, July 29, 1886.

DEVAN, S. C., PASSED ASSISTANT-SURGEON.—Granted leave of absence for ten days, July 26, 1886.

FATTIC, J. B., ASSISTANT-SURGEON.—Granted leave of absence for twenty-nine days, July 26, 1886.